

# PHOTOFACT® ZENITH ROYAL 3000-1



TRADE NAME: Zenith Model Royal 3000-1  
(Ch. 12KT40Z8)

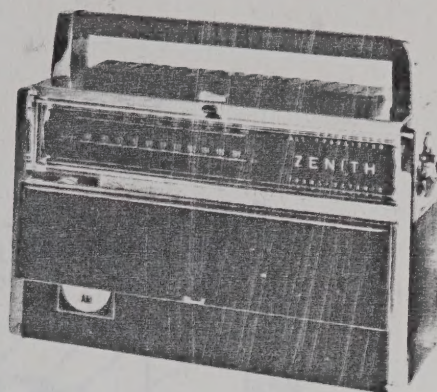
SUPPLIER: For Current Address, see Annual Index

TYPE SET: 12-Transistor LW-AM-SW-FM Receiver

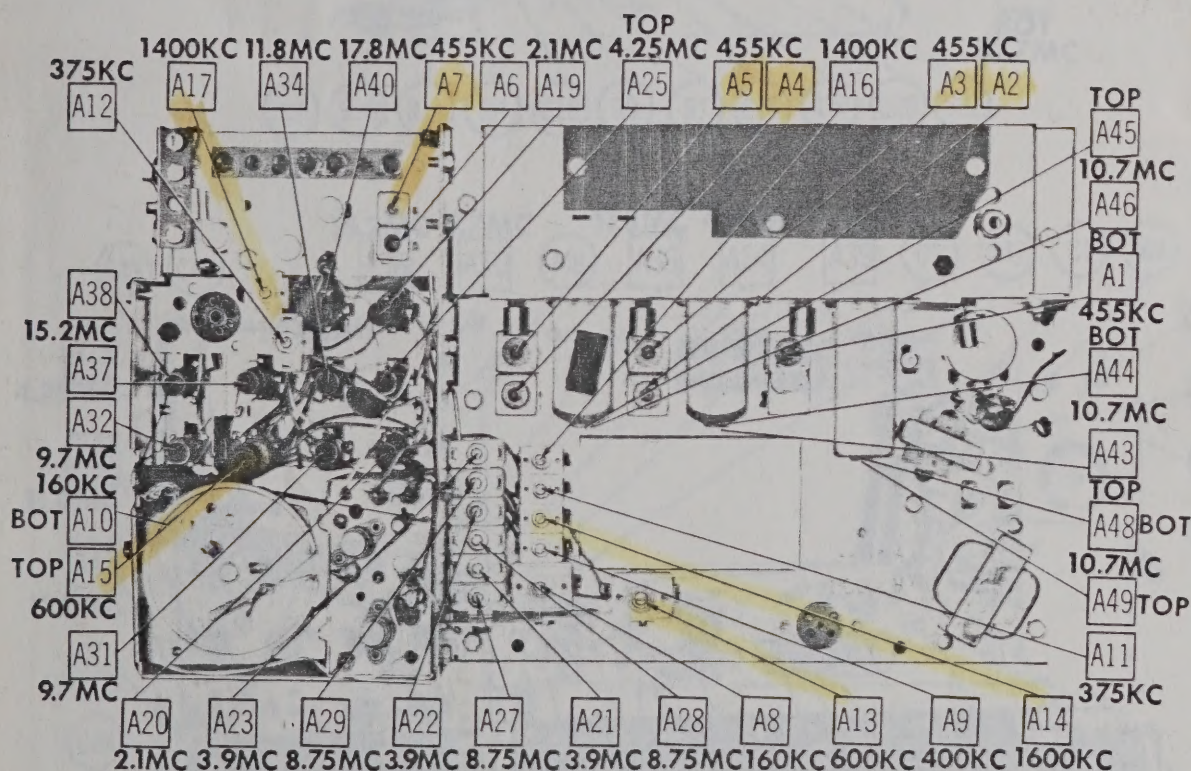
POWER SUPPLY: 12 Volts DC (Receiver)  
1.5 Volts DC (Dial Light)

RATING: (FM) 24ma @ 12VDC (No Signal, Min. Volume)  
35ma @ 12VDC (Signal, Normal Volume)

TUNING RANGE: LONG WAVE 150 - 400KC  
BROADCAST 540 - 1620KC  
SHORT WAVE 2 - 4MC  
SHORT WAVE 4 - 9MC  
SHORT WAVE 9.4 - 10.1MC (31M)  
SHORT WAVE 11.4 - 12.3MC (25M)  
SHORT WAVE 14.6 - 15.8MC (19M)  
SHORT WAVE 17.1 - 18.5MC (16M)  
FREQ. MOD. 88 - 108MC



ZENITH MODEL ROYAL 3000-1 (Ch. 12KT40Z8)



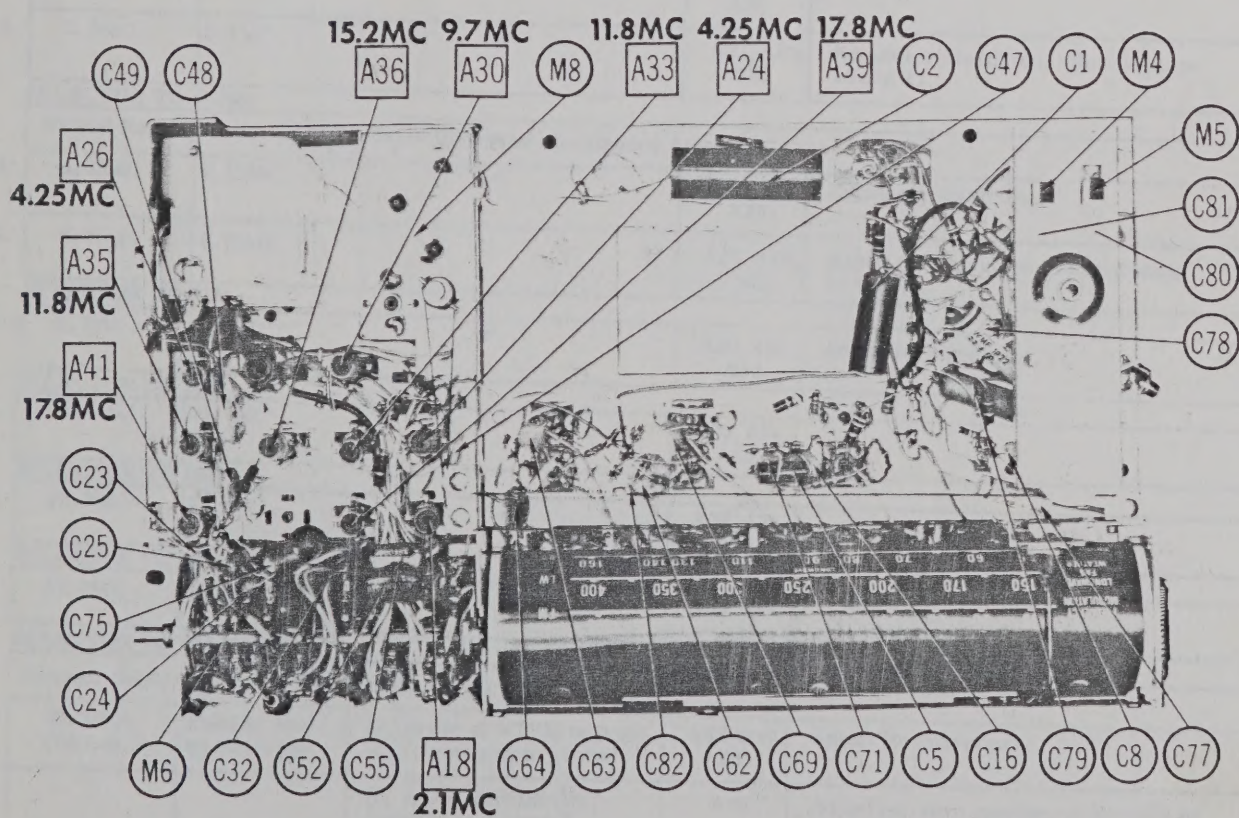
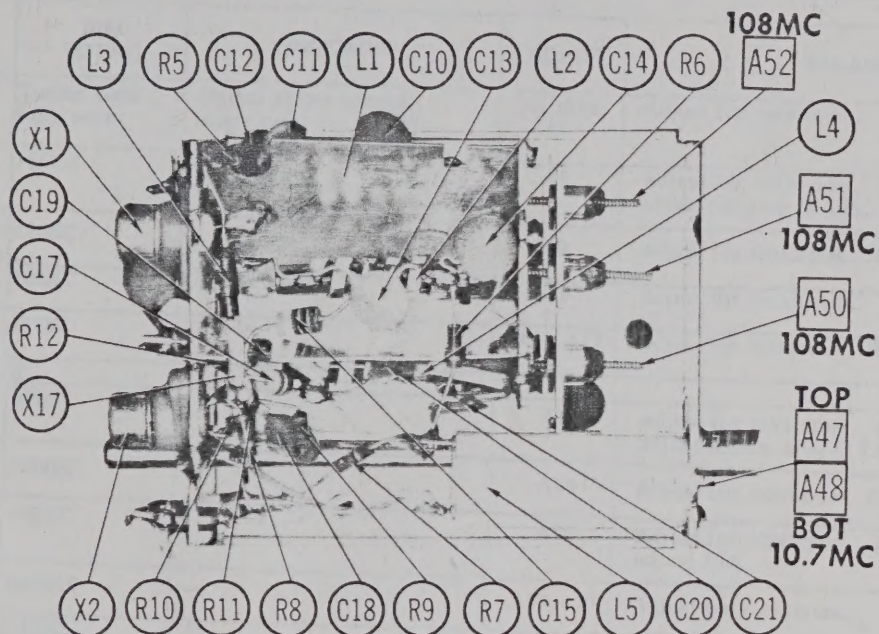
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

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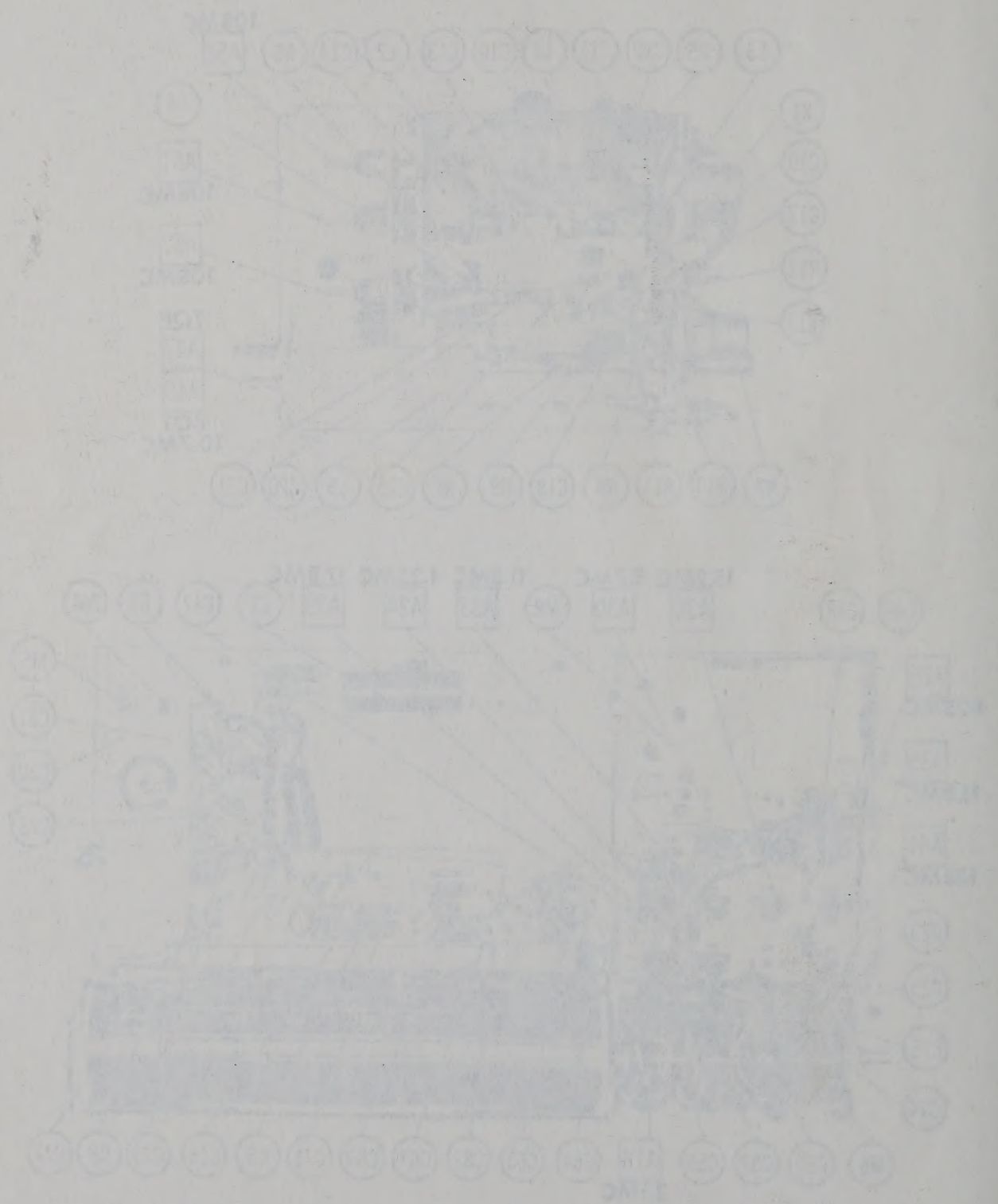


1.0003 DAY-24 H 15:30.









# ALIGNMENT INSTRUCTIONS

Check for specified source voltage. Set Volume control at maximum.

Fashion loop of several turns of wire and connect generator across loop.

Adjust output of generator to radiate only enough signal into receiver to obtain a suitable indication.

Suggested Alignment Tools:

A1 thru A9, A11 thru A14, A16, A17, A21, A22, A23, A27, A28, A29... GENERAL CEMENT #8868, 9089

WALSCO #2541, 2587

A18, A19, A20, A24, A25, A26, A30 thru A49..... GENERAL CEMENT #9296, 9297, 9300

WALSCO #2510, 2546, 2547

## SELECTOR IN LW

	GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	455KC	Tuning Gang fully open.	Output Meter across voice coil.	A1 thru A7	Adjust for maximum.
2.	160KC	160KC	"	A8	Adjust for maximum. If necessary, adjust top slug of L31.
3.	400KC	400KC	"	A9	Adjust for maximum. Repeat steps 2 & 3.
4.	160KC	160KC	"	A10	Adjust for maximum.
5.	375KC	375KC	"	A11, A12	Adjust for maximum. Repeat steps 4 & 5.

## SELECTOR IN BC

6.	600KC	600KC	"	A13	Adjust for maximum. If necessary, adjust bottom slug of L31.
7.	1600KC	1600KC	"	A14	Adjust for maximum. Repeat steps 6 & 7.
8.	600KC	600KC	"	A15	Adjust for maximum. If necessary, adjust L15.
9.	1400KC	1400KC	"	A16, A17	Adjust for maximum.

## SELECTOR TO 2-4MC

10.	2.1MC	2.1MC	"	A18, A19, A20	"
11.	3.9MC	3.9MC	"	A21, A22, A23	Adjust for maximum. Repeat steps 10 and 11.

## SELECTOR TO 4-9MC

Extend Rod Antenna. Loosely couple Generator to extended Antenna.

12.	4.25MC	4.25MC	"	A24, A25, A26	Adjust for maximum.
13.	8.75MC	8.75MC	"	A27, A28, A29	Adjust for maximum. Repeat steps 12 and 13.

## SELECTOR TO 31M

14.	9.7MC	9.7MC	"	A30, A31, A32	Adjust for maximum.
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## SELECTOR TO 25M

15.	11.8MC	11.8MC	"	A33, A34, A35	"
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## SELECTOR TO 19M

16.	15.2MC	15.2MC	"	A36, A37, A38	"
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## SELECTOR TO 16M

17.	17.8MC	17.8MC	"	A39, A40, A41	"
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## SELECTOR TO FM POSITION

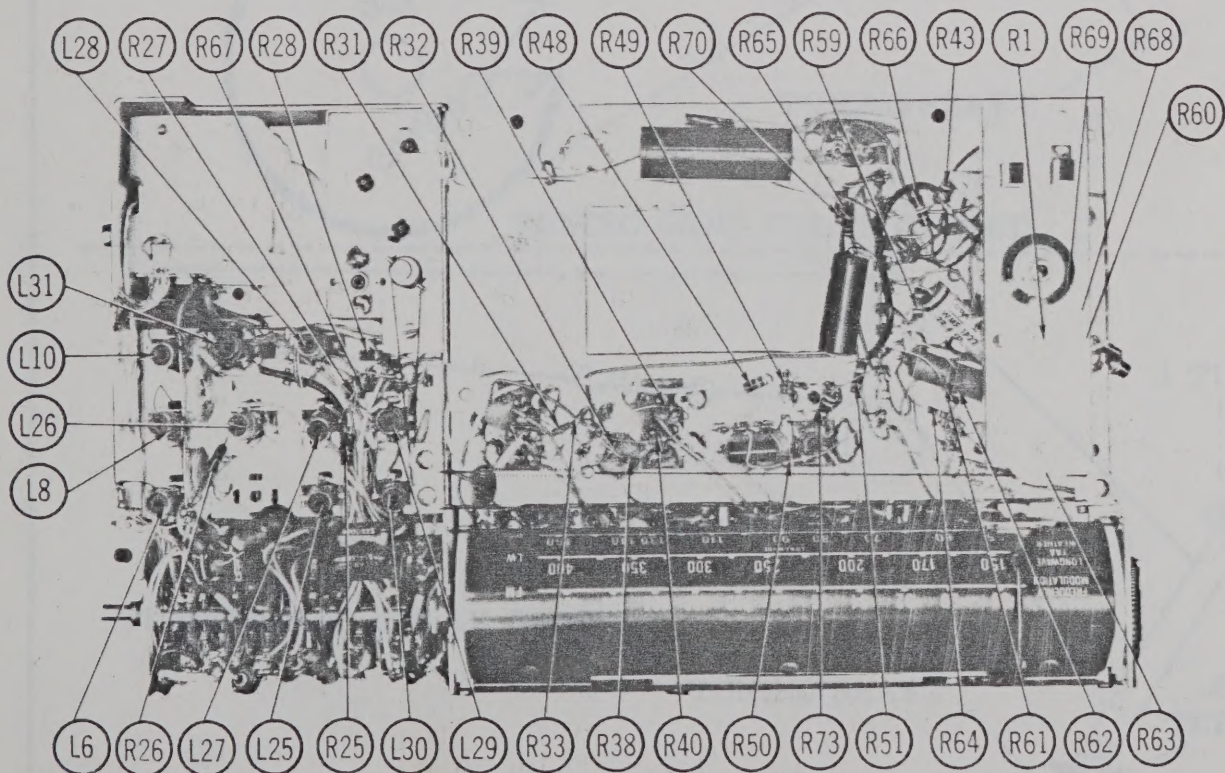
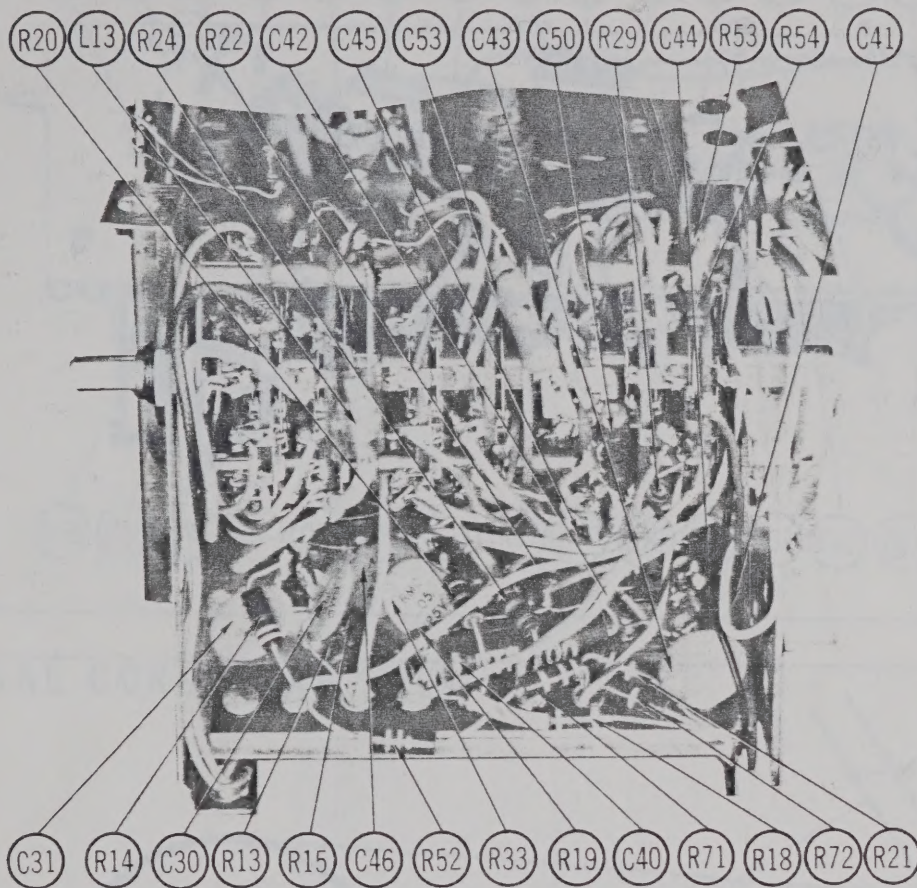
Connect Generator across FM Antenna Terminals.

18.	10.7MC (Unmod.)	Point of non- interference.	DC probe of VTVM to point A; common to ground.	A42 thru A48	Adjust for maximum.
19.	"	"	DC probe to point B; common to ground.	A49	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.
20.	108MC	Set at high end.	DC probe to point A; common to ground.	A50, A51, A52	Adjust for maximum.

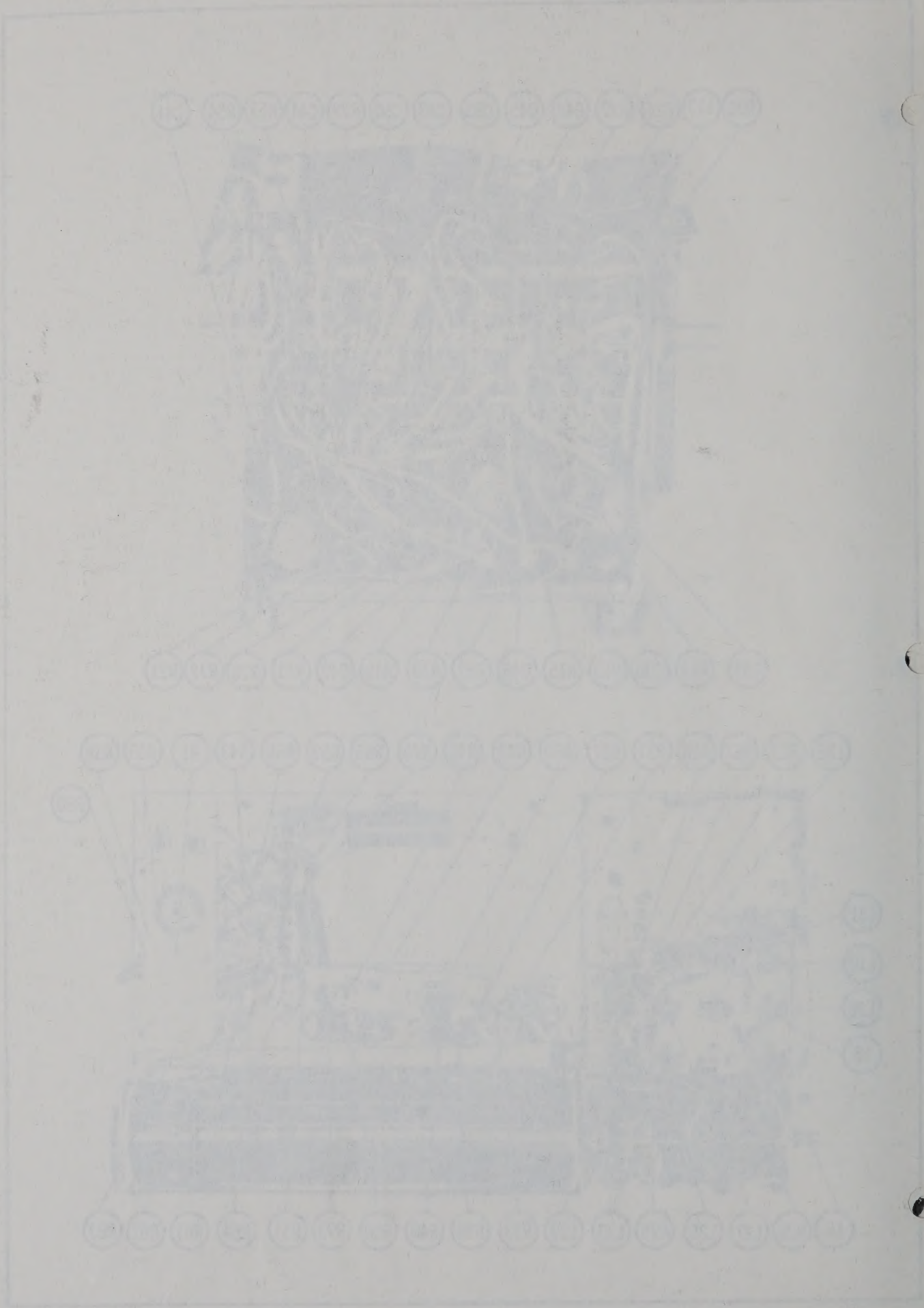




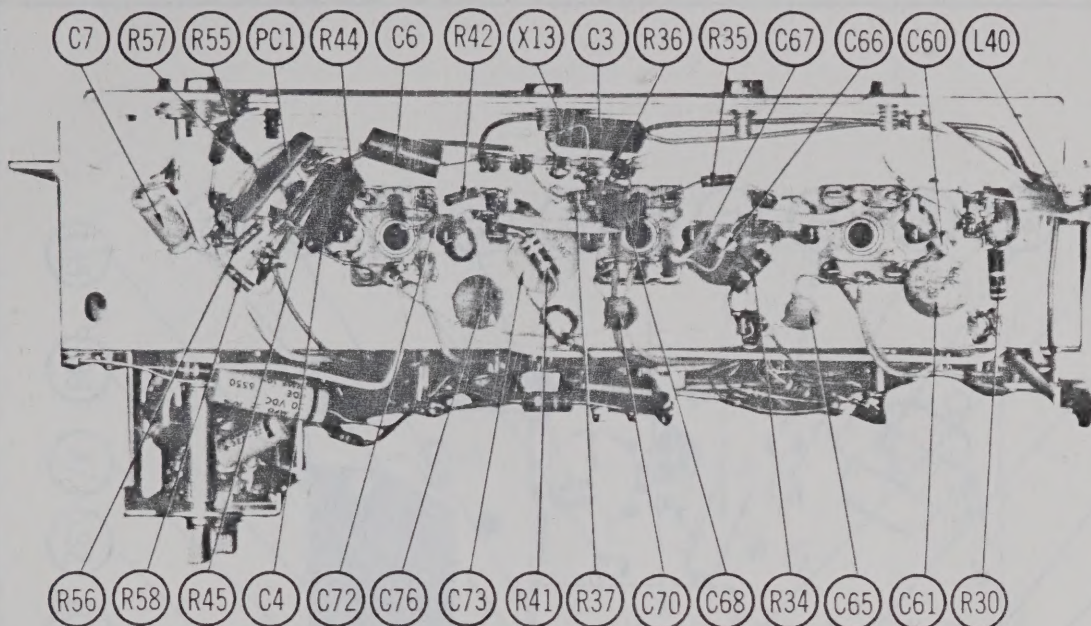




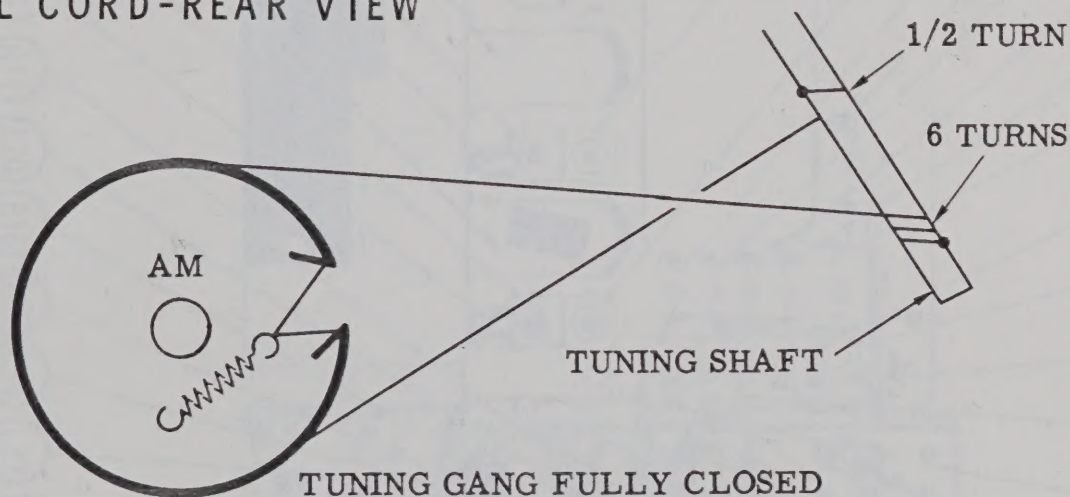






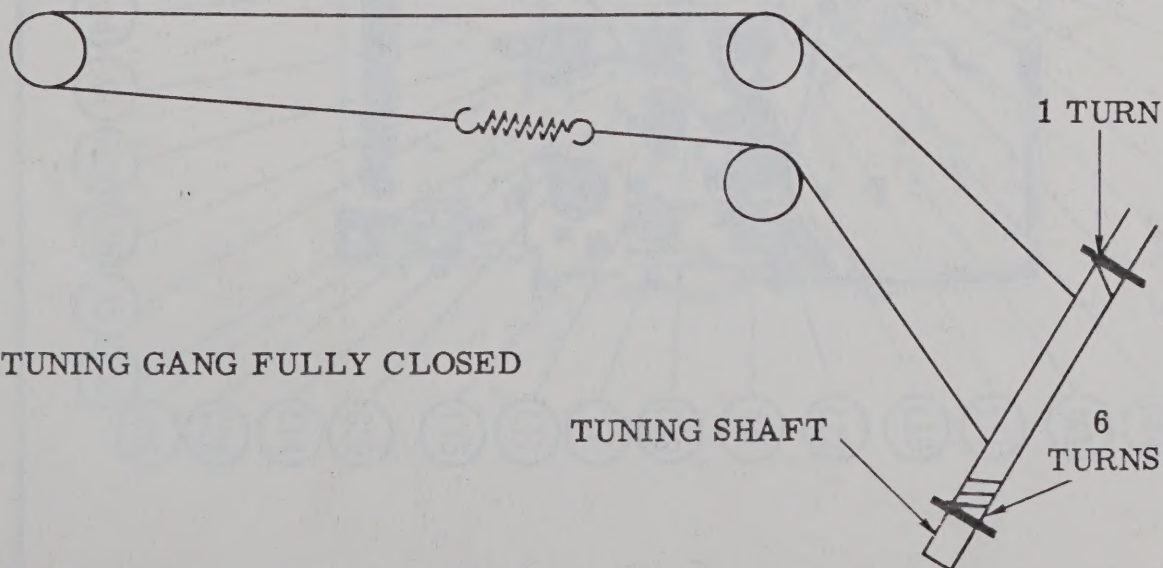


DIAL CORD-REAR VIEW

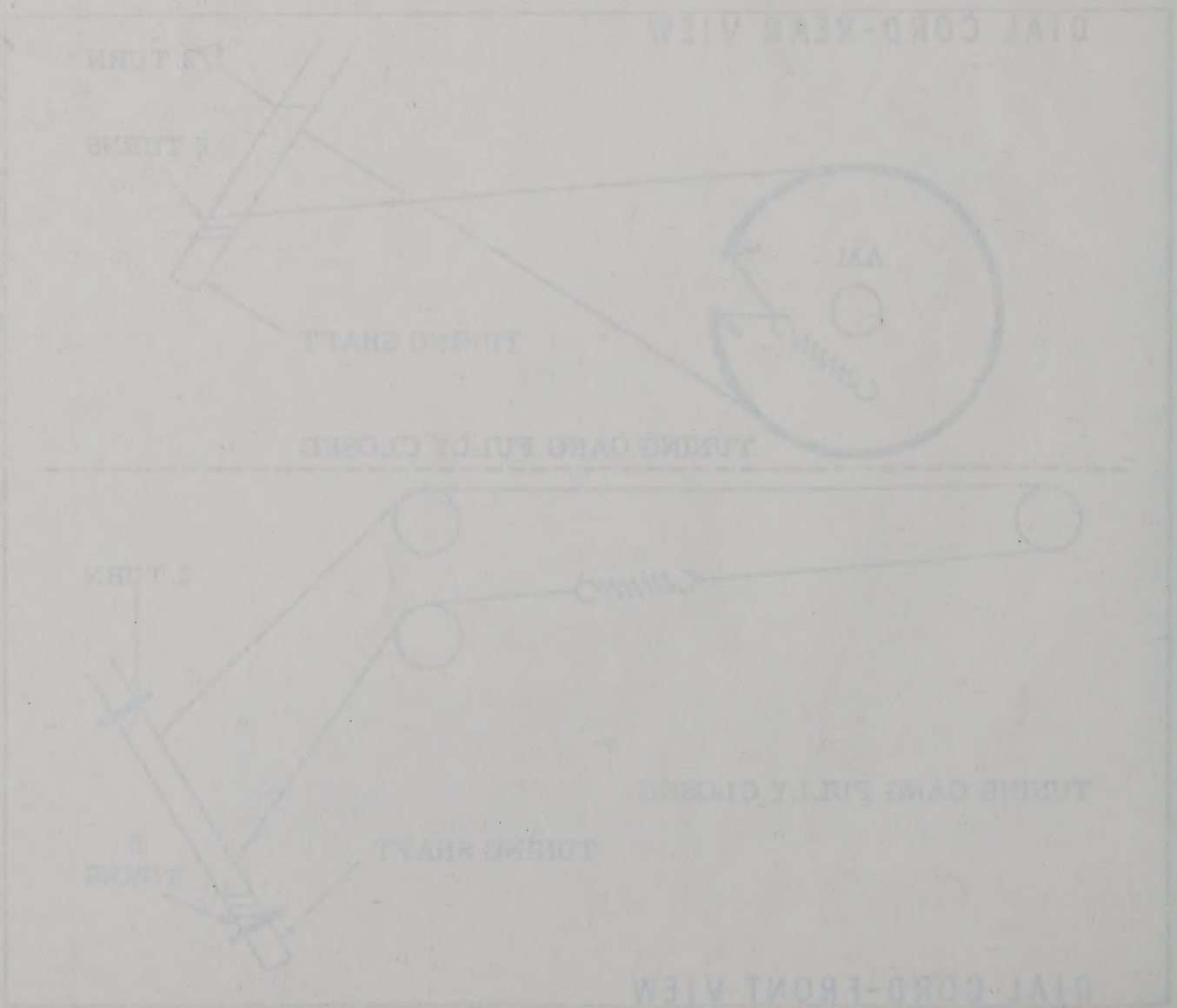


TUNING GANG FULLY CLOSED

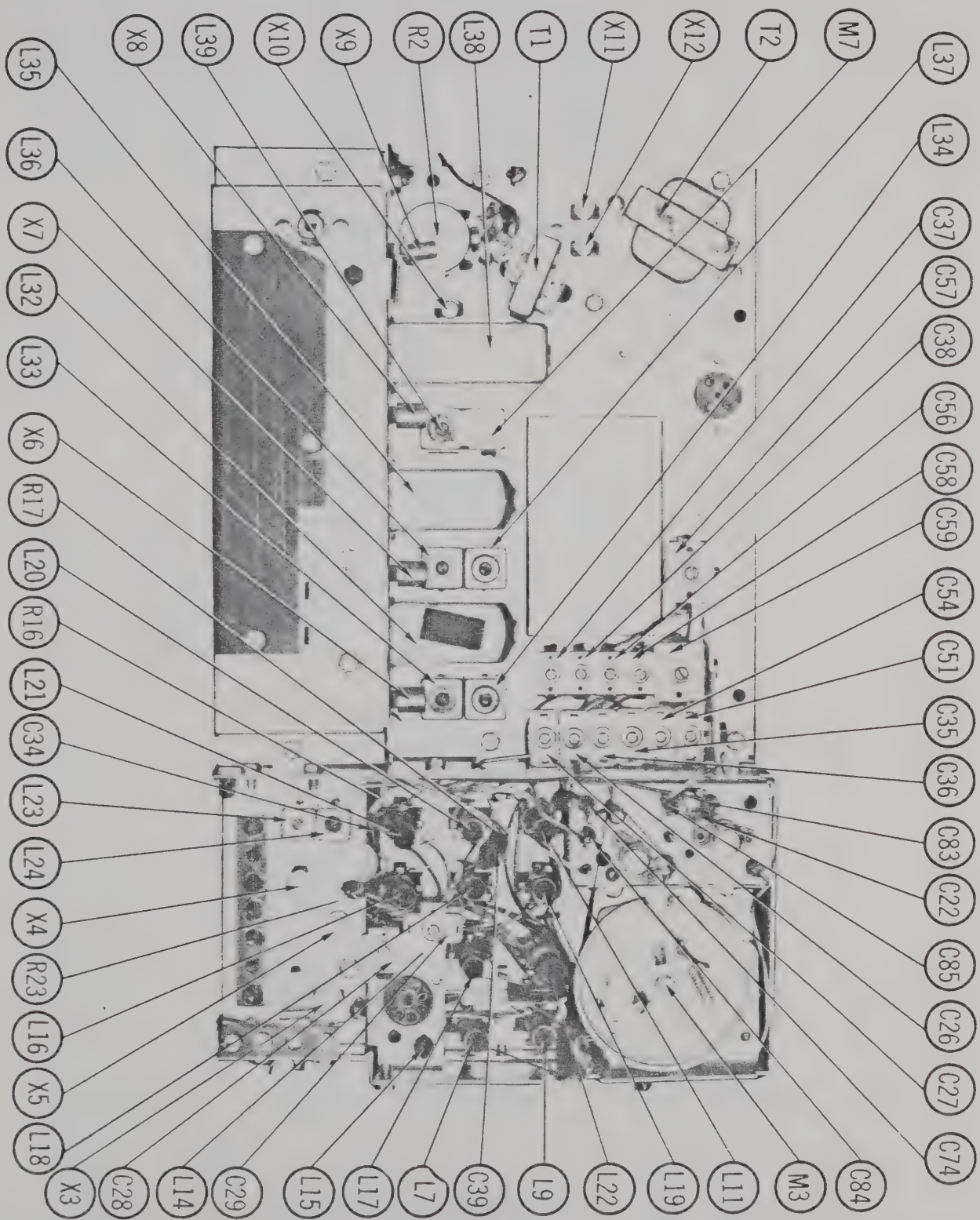
DIAL CORD-FRONT VIEW

















# PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

## TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			ZENITH PART No.	NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.		
X1	2N2654	FM RF Amp.	DS-41		SK-3006	121-294	PNP
X2	2N2654	FM Converter	DS-41		SK-3006	121-295	PNP
X3	2N2089	AM RF Amp.	DS-25	GE-1		121-349	PNP
X4	2N2092	AM Mixer	DS-25	GE-1		121-351	PNP
X5	2N2089	AM Osc.	DS-25	GE-1		121-350	PNP
X6	2N2089	1st AM-FM IF Amp.	DS-56	GE-9		121-352	PNP
X7	2N2089	2nd AM-FM IF Amp.	DS-56	GE-9		121-352	PNP
X8	2N2089	3rd AM-FM IF Amp.	DS-56	GE-9		121-352	PNP
X9	2N2429	AF Amp.	DS-26	GE-2	SK-3004	121-374	PNP
X10	2N2426	Driver	DS-26	GE-2	SK-3004	121-375	PNP
X11	2N2431	Output	DS-26	GE-2	SK-3004	121-373	PNP
X12	2N2431	Output	DS-26	GE-2	SK-3004	121-373	PNP

## POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKIS TARZIAN PART No.
X13			1N34AS	1N34A			
X14		403-1 or 103-44	1N34AS	1N34A			
X15		403-1 or 103-44	1N34AS	1N34A			
X16		103-31	1N34AS	1N34A			
X17		103-39	1N34AS	1N34A			

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING		ZENITH PART No.	REPLACEMENT DATA			
	CAP.	VOLT.		AEROVOX PART No.	CORNELL DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.
C1	50	12	22-2883	CRE417A	NLW50-15	MT1-16	TT15X50
C2	500	12	22-2985		BR500-15	QT1-30	TC1505
C3	20	3	322-37	CRE211A	NLW20-6	MT1-10	TT12X20
C4	5	12	322-22	CRE404A	NLW5-15	MT1-3	TT12X5
C5	10	6	22-3256	CRE307A	NLW10-6	MT1-5	TT6X10
C6	5	12	322-22	CRE404A	NLW5-15	MT1-3	TT12X5
C7	5	12	322-22	CRE404A	NLW5-15	MT1-3	TT12X5
C8	5	12	322-22	CRE404A	NLW5-15	MT1-3	TT12X5

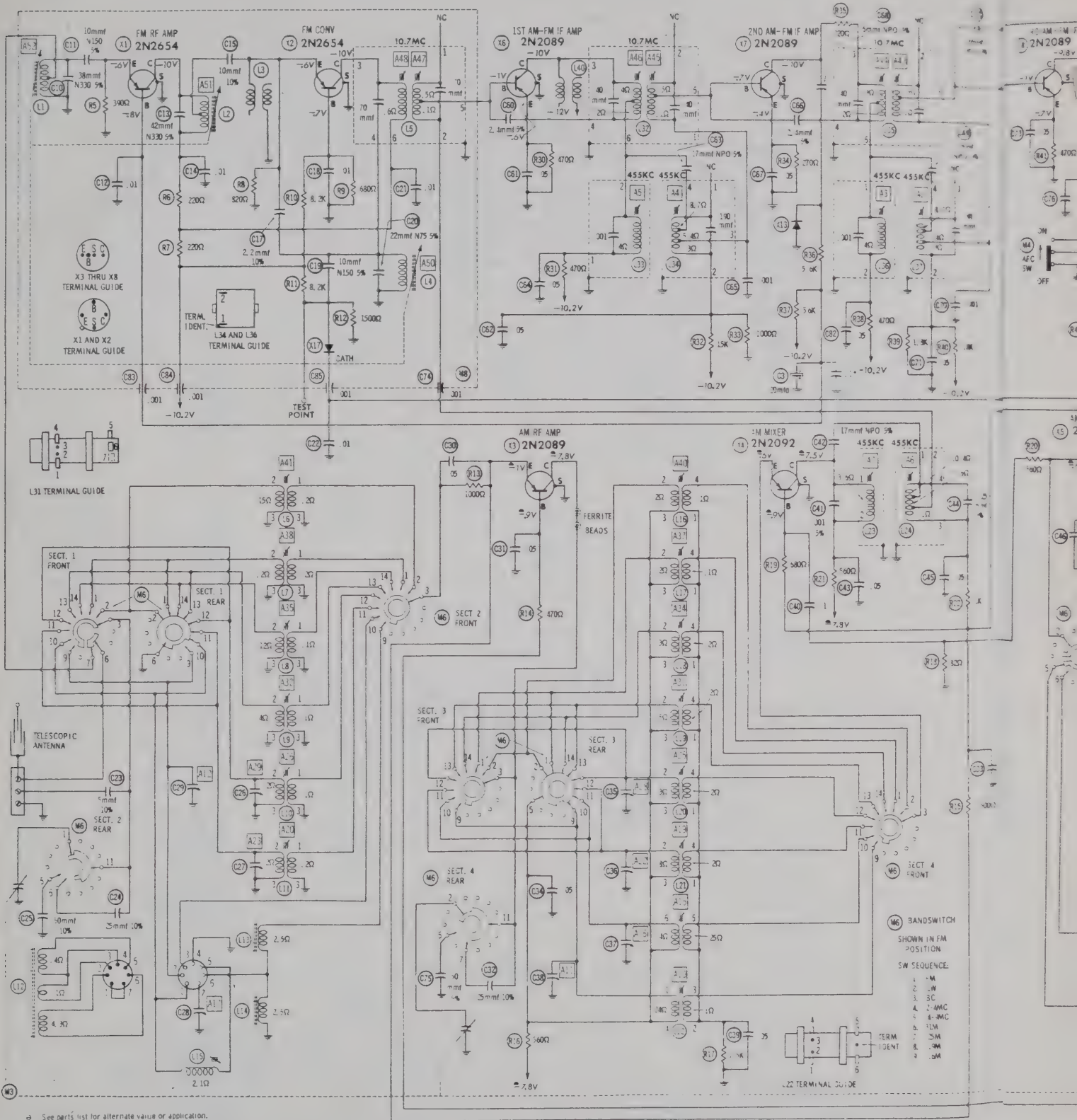
## CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ELMENCOR PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	38 N330 5%					*	*	10TCS-Q39
C11	10 N150 5%					*	*	10TCP-Q10
C12	.01		TTD-01	CK-103	HCZ3ROXR103P	CCD-103	TA110	TG-S10
C13	42 N330 5%	#22-3791	TTD-01	CK-103	HCZ3ROXR103P	CCD-103	TA110	TG-S10
C14	.01		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CNO410	10TCC-Q10
C15	10 10%		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C16	.05		NPO-DI 2.2	DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C17	2.2 10%		TTD-01	CK-103	HCZ3ROXR103P	CCD-103	TA110	TG-S10
C18	.01					*	*	10TCP-Q10
C19	10 N150 5%					*	*	
C20	22 N75 5%	#22-3621	TTD-01	CK-103	HCZ3ROXR103P	CCD-103	TA110	TG-S10
C21	.01		TTD-01	CK-103	HCZ3ROXR103P	CCD-103	TA110	TG-S10
C22	.01		NPO-DI 5.0	DTZ-4R7	CZ601CH5R0D	CCTO-050	CNO547	10TCC-V50
C23	5 10%		NPO-DI 22	DTZ-22	CY601CG220K	CCTO-220	CNO422	10TCC-Q22
C24	25 10%		DI-50	DD-500	JBZ601YP500K	CCD-500	GP450	10TS-Q50
C25	50 10%							
C26								
C27								
C28		#22-2983						
C29		#22-3787	TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C30	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C31	.05		NPO-DI 22	DTZ-22	CY601CG220K	CCTO-220	CNO422	10TCC-Q22
C32	25 10%		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C33	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C34	.05							
C35								
C36								
C37								
C38								
C39	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C40	.1mfd		TTD-1	CK-104	HCZ3ROXR104P		TA010	TG-P10
C41	.001 5%		ADM-20-102	CPR-1000J	CD19F102J500	DM-19-102	SX210	MS-210
C42	17 NPO 5%			TCZ-18	CY601CG180J	CCTO-180	CNO418	10TCC-Q18
C43	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C44	125 5%		NPO-DI 150	DTZ-150	HCZ3ROXR503P	CCTO-151	CNO315	10TCC-T15
C45	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C46	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C47	470		DI-470	DD-471	JBZ601YP471K	CCD-471	GP347	10TS-T47
C48	.0022		DI-2200	DD-222	JBX601YP222K	CCD-222	GP222	10TS-D22
C49	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C50	60 N470 5%					*	*	10TCT-Q56

(CONTINUED ON PAGE 150)







See parts list for alternate value or application.

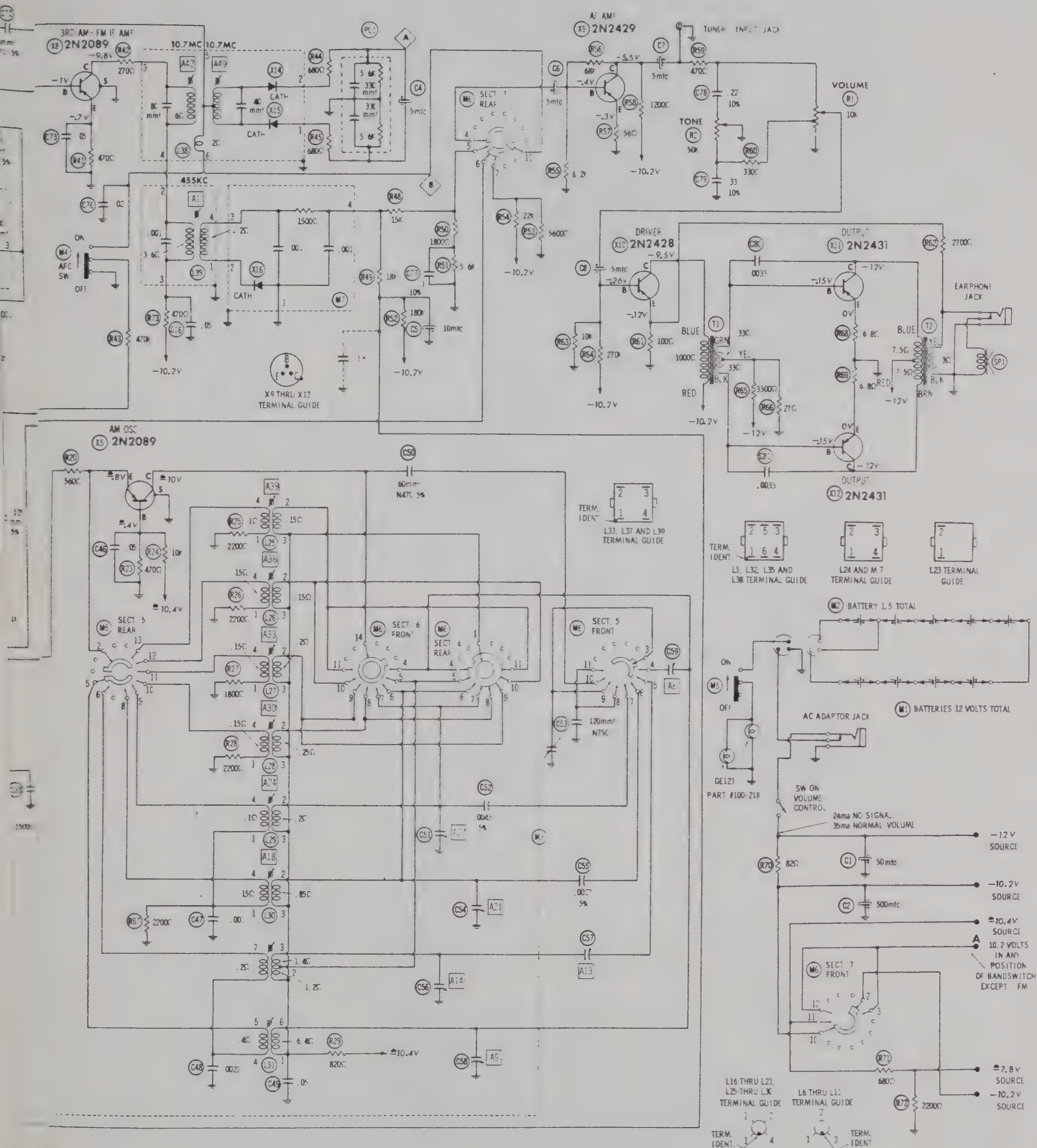
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals wired from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

VOLTAGES MEASURED IN AM POSITION  
VOLTAGES MEASURED IN FM POSITION  
UNLESS OTHERWISE DESIGNATED

MUST BE ADDED TO CIRCUIT IF OTHER  
THAN NON INDUCTIVE ELECTROLYTIC  
IS USED







ZENITH MODEL ROYAL 3000-1 (Ch. 12KT40Z8)





# PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

## CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOR PART No.	MALLORY PART No.	SPRAGUE PART No.
C51	.0043 5%	①	ADM-20-432	CPR-4300J	CD19F432J500	CM-20B-432J	SX423	MS-243
C52	120 N750		N750-DI 100	DTN-100	CX601UJ101K	CCTN-101	CN7310	10TCU-T10
C53		①						
C54	.0027 5%	②	1464-0027	CPR-2700J	1R5D27	CM-20B-272J	MCJ460,5	MS-227
C55		②						
C56		②						
C57		②						
C58		②						
C59		②						
C60	2.2 5%		NPO-DI 2.2	DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C61	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C62	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C63	17 NPO 5%		TCZ-18	CK-503	CY601CG18QJ	CCTO-180	CNO418	10TCC-Q18
C64	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C65	.001		DI-1000	DM-102	JBS601Y P102K	CCD-102	SM210	5GAB-D10
C66	2.2 5%		NPO-DI 2.2	DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C67	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C68	6 NPO 5%		NPO-DI 6.8	DTZ-6R8	CZ601CH6R8D	CCTO-6R8	CNO568	10TCC-V68
C69	17 NPO 5%		TCZ-18	CK-503	CY601CG18QJ	CCTO-180	CNO418	10TCC-Q18
C70	.001		DI-1000	DM-102	JBS601Y P102K	CCD-102	SM210	5GAB-D10
C71	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C72	6 NPO 5%		NPO-DI 6.8	DTZ-6R8	CZ601CH6R8D	CCTO-6R8	CNO568	10TCC-V68
C73	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C74	.001		EF-001	MFT-1000		CCF-102	CT280A	
C75	50 5%		NPO-DI 47	DTZ-47	CX601CG470K	CCTO-470	CNO447	10TCC-Q47
C76	.02		TTD-02	CK-203	HCZ3ROXR203P	CCD-203	TA120	TG-S20
C77	.1mfd 10%		TTD-1	CK-104	HCZ3ROXR104P		TA010	TG-P10
C78	22 10%		DBE4P22		DMF4P22	4DP-5-22A	PVC4022	4PS-P22
C79	.33 10%		BE2P33		PM2P33	1DP-4-33A	GEM2033	2TM-P33
C80	.0033		DI-3300	DD-332	JBV601YP332K	CCD-332	GP233	10TS-D33
C81	.0033		DI-3300	DD-332	JBV601YP332K	CCD-332	GP233	10TS-D33
C82	.05		TTD-05	CK-503	HCZ3ROXR503P		TA150	TG-S50
C83	.001		EF-001	MFT-1000		CCF-102	CT280A	
C84	.001		EF-001	MFT-1000		CCF-102	CT280A	
C85	.001		EF-001	MFT-1000		CCF-102	CT280A	

① Zenith Part #22-3745 (Includes C26, C27, C35, C36, C51, C54) # Zenith Part Number.

② Zenith Part #22-3744 (Includes C37, C38, C56, C58, C59)

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

## CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	10K	63-5020	F55-15K ①, SSK012, KR-1	A47F-15K *†, KSS-3, SWE-12 or (NPF-15K †, UP-C400, NWE-12)	B13-118X †, SK1, 76-1 or (BU1 †, CF42T, SS1, GC)**	RU14T53, SL36, SL3250, US41 or (UA153T14 †, SL38, SK750, US41) or (UT153 †, US26)
R2	Tone	50K	63-5021	F2-50K †, SSK012	A47-50K-Z†, KSS-3 or (NP-50K-Z †, UP-C-400)	Q13-123 † or (BU1 †, CF63, SS1, DC1)**	RU54A, SL36, SL3250 or (UA54A †, SK750 or U34 †)

① Disregard 10K Tap

† Enlarge Mtg. Hole

\* Use 10K Tap

\*\* "SNAPTROL"

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				
		ZENITH PART No.	MEISSNER Part No.	MERIT PART No.	MILLER PART No.	WORKMAN PART No.
L1	FM Antenna	S-58095 ①				
L2	FM RF	S-58095 ①				
L3	IF - Rejection	①				
L4	FM Osc.	S-58095 ①				
L5	1st FM IF	95-2008 ①				
L6	16M Ant.	S-42094 ②				
L7	19M Ant.	S-42093 ②				
L8	25M Ant.	S-42092 ②				
L9	31M Ant.	S-42091 ②				
L10	4-9MC Ant.	S-42090 ②				
L11	2-4MC Ant.	S-42089 ②				
L12	BC/LW Loopstick	S-43594				
L13	Ant. Coupling (100uh)	S-45000 ②	19-2024		73F104AF	T866
L14	Ant. Coupling (100uh)	S-45000 ②				
L15	Ant. Loading	S-42080 ②			20A885	
L16	16M RF	S-42102 ②				
L17	19M RF	S-42101 ②				
L18	25M RF	S-42100 ②				
L19	31M RF	S-42099 ②				
L20	4-9MC RF	S-42098 ②				
L21	2-4MC RF	S-42097 ②				
L22	BC/LW RF	S-43364 ②				
L24	1st AM IF Sec.	95-2003				
L25	16M Osc.	S-42087 ②				
L26	19M Osc.	S-42086 ②				
L27	25M Osc.	S-42085 ②				
L28	31M Osc.	S-42084 ②				
L29	4-9MC Osc.	S-68076 ②				
L30	2-4MC Osc.	S-68075 ②				
L31	BC/LW Osc.	S-43363 ②				
L32	2nd FM IF	95-2247				
L33	2nd AM IF Pri.	95-2004				
L34	2nd AM IF Sec.	95-2005				
L35	3rd FM IF	95-2247				
L36	3rd AM IF Pri.	95-2004				
L37	3rd AM IF Sec.	95-2005				
L38	Ratio Det.	95-2010 ③				
L39	4th AM IF	95-2006	16-9002	BC-326	2044	
L40	IF - Rejection	②				

① Part of FM Tuner S-69067

② Part of M6

③ Includes X14, X15





## PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

## TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			ZENITH	MERIT	STANCOR	THORDARSON	TRIAD	
	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	PART No.	
T1	3.3	1	95-2029					

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			ZENITH	MERIT	STANCOR	THORDARSON	TRIAD	
	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	PART No.	
T2	100Ω CT	3-4Ω	95-2026					

## SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		ZENITH PART No.	QUAM PART No.	
SP1	4" x 6" PM 3-4Ω	49-966	46A07	

## COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ZENITH PART No.	REPLACEMENT DATA
PC1	Ratio Det. Filter	300pf, 300pf, 5600Ω, 5600Ω	105-96	

## BATTERIES

ITEM No.	VOLTAGE	ZENITH PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M1	12V		230 or AL2	1050 or E95	M13R or Mn1300	8 Required
M2	1.5V		230 or AL2	1050 or E95	M13R or Mn1300	

## MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M3	Tuning Cap (AM)	22-3743	Less Components Includes all Ant., RF, Osc. Coils & Components Includes X16 Complete 110 - 120 Volts 115/230 Volts
M4	AFC Switch	85-747	
M5	Pilot Lite Switch	85-756	
M6	Switch, Selector	85-758	
M7	(Switch & Coil Ass'y)	S-69066	
M8	AM Det. Assembly	S-52650	
	FM Tuner	S-69067	
	AC Adapter	S-64352	
	AC Adapter	S-65074	

## CABINETS &amp; CABINET PARTS

(When Ordering Specify Model, Chassis &amp; Color)

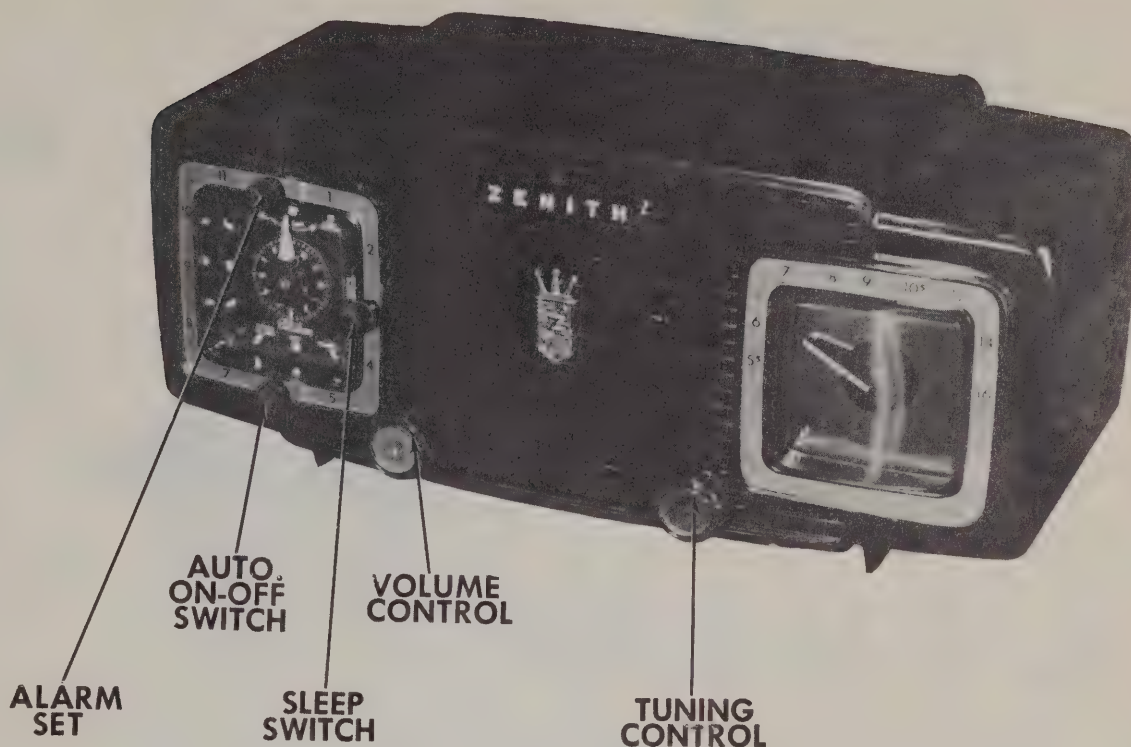
ITEM	PART No.	ITEM	PART No.
Door Assembly (Top)	S-58124	Knob - Band Selector	S-58035
Door Assembly (Bottom)	S-58122	Handle & Pin Assembly	S-43259
Knob - Tuning	S-65523	Telescopic Ant. Assembly	S-42207
- Tone & Volume	S-58423		

## WIRING DATA

General-use Unshielded Hook-up Wire ..... Use Belden No. 8530 (Solid 22AWG) Available in 12 Colors  
 8524 (Stranded 22AWG)  
 8570 (Stranded 26AWG)





ZENITH MODELS  
L515 (Ch. 5L06), L520 (Ch. 5L07)ZENITH MODELS  
L515 (Ch. 5L06), L520 (Ch. 5L07)

TRADE NAME Zenith Models L515 (Ch. 5L06), L520 (Ch. 5L07)  
 MANUFACTURER Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.  
 TYPE SET AC Operated AM Superheterodyne Receiver with Electric Clock  
 TUBES (Five) Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier

POWER SUPPLY 110-120 Volts AC-60 Cycles

RATING .25 Amp. @ 117 Volts AC

TUNING RANGE—BROADCAST 535-1620KC

## ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MF capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.  
 To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial.  
 Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.5MF	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400% Mod)	600KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MF to reduce hum modulation.
2.		Loop	1600KC	1600KC	"	A5	Fashion loop of several of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	1400KC	"	A6	"

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PARTS LIST AND DESCRIPTIONS

CHASSIS—TOP VIEW

ZENITH  
MODEL L915 (Ch. 5L09)

TUBES (SYLVANIA, GENERAL ELECTRIC, WESTINGHOUSE)

ITEM No.	USE	REPLACEMENT DATA		REMARKS BASE TYPE	NOTES
		ZENITH PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det.-AFC-AF Amp.	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	59Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP. VOLT	REPLACEMENT DATA					NOTES
		ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNFILL DUBILIER PART No.	SPRAGUE PART No.	
C1A	.80	22-2351	AFH2-19	DF-503	B08	FP216	TVL-2442
C1B	.40	22-829	P288-05	D6-251	P285	PT415	2TM-S5
C2	.05	22-1666	S1250	DD-103	TM581	UC-5325	5GA-T25
C3	250	22-3	BPD-01	D6-470	TM581	DC-511	5HK-S1
C4	47	22-6	BPD-01	D6-470	TM581	UC-5447	5GA-Q47
C5	47	22-3	BPD-01	D6-470	TM581	DC-511	5HK-S1
C6	10000	22-3	BPD-01	D6-470	TM581	DC-511	5HK-S1
C7	.01	22-1182	P488-01	DD-103	PT401	PT401	4TM-S1
C8	10000	22-3	BPD-01	DD-103	TM581	DC-511	5HK-S1
C9	.05	22-829	P288-05	DD-103	P285	PT415	2TM-S5

CONTROLS

ITEM No.	RATING RESISTANCE	REPLACEMENT DATA			INSTALLATION NOTES
		ZENITH PART No.	IRC PART No.	MALLORY PART No.	
R1A	500KΩ	63-2393	Q11-133	AG-58-S	Volume Attach to R1A
R1B	Shift	Not Req.	Not Req.	AK-4	U-50 Not Req.

RESISTORS

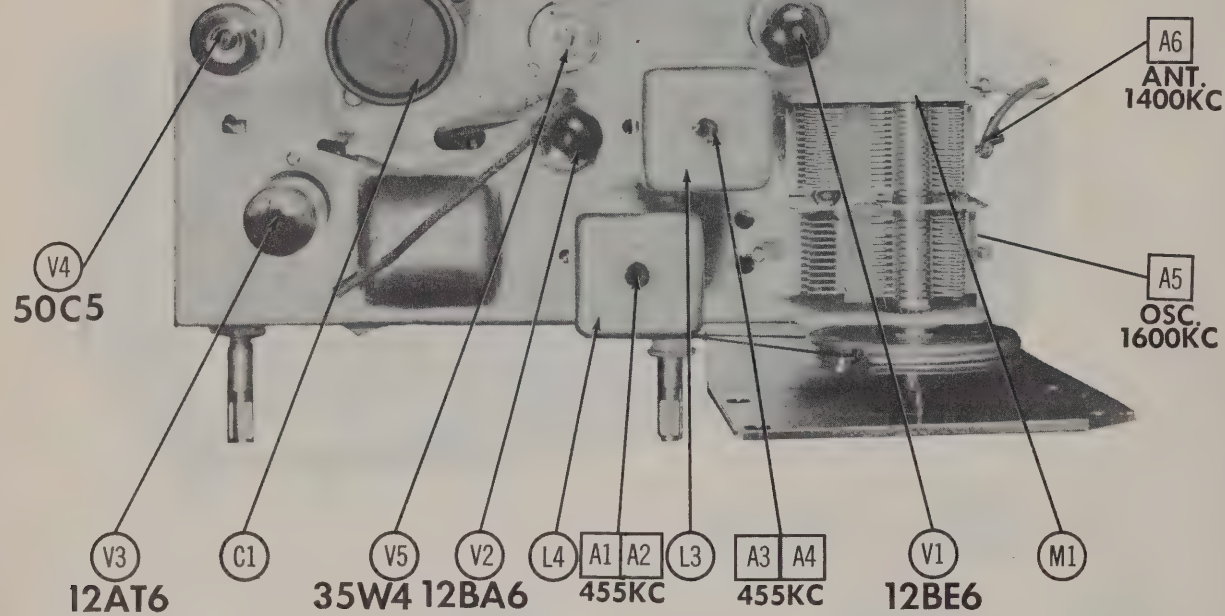
ITEM No.	RATING OHMS WATT	REPLACEMENT DATA		NOTES	REPLACEMENT DATA	NOTES
		ZENITH PART No.	IRC PART No.		ZENITH PART No.	
R2	22KΩ	63-1842	BTS-22K		63-1898	BTS-470K
R3	68Ω	63-1737	BTS-68		63-1977	BTA-150
R4	2.2Meg	63-1926	BTS-2.2Meg		63-965	BTA-1000
R5	4.7 Meg	63-1940	BTS-4.7Meg		63-1450	
R6	470KΩ	63-1898	BTS-470K			

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA			NOTES
		ZENITH PART No.	Stancor PART No.	Triad PART No.	
T1	2.34KΩ 3.3Ω	95-1354	A-3330 ①	A-3031 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA		NOTES
	SIZE	FIELD	ZENITH PART No.	JENSEN PART No.	
SP1	4"	PM	49-713	ST-113 Mod P4-X	



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		ZENITH PART No.	REPLACEMENT DATA			NOTES
		PRI.	SEC.		MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	3.1Ω		S-20558 *				
L2	Osc. Coil	7Ω	6Ω	S-18816	14-1074	70-Osc.		Includes cabinet back
L3	Input IF	20Ω	22Ω	95-1101	16-6666	BC-368	012-C1	
L4	Output IF	21Ω	21Ω	95-1102	16-6770 †	BC-355 †	12-C6 †	

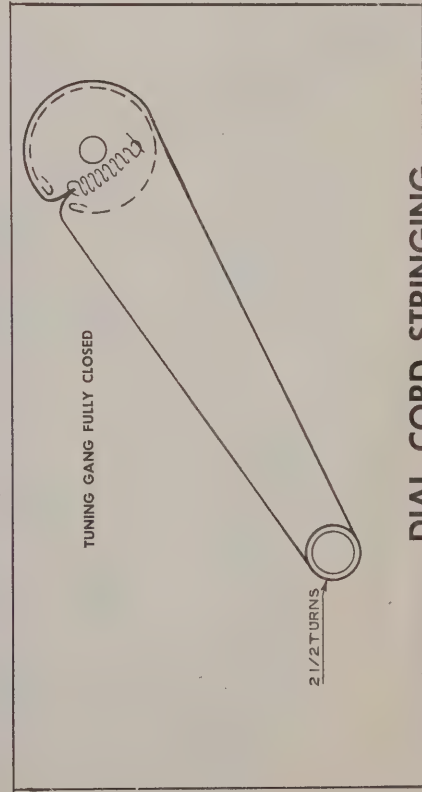
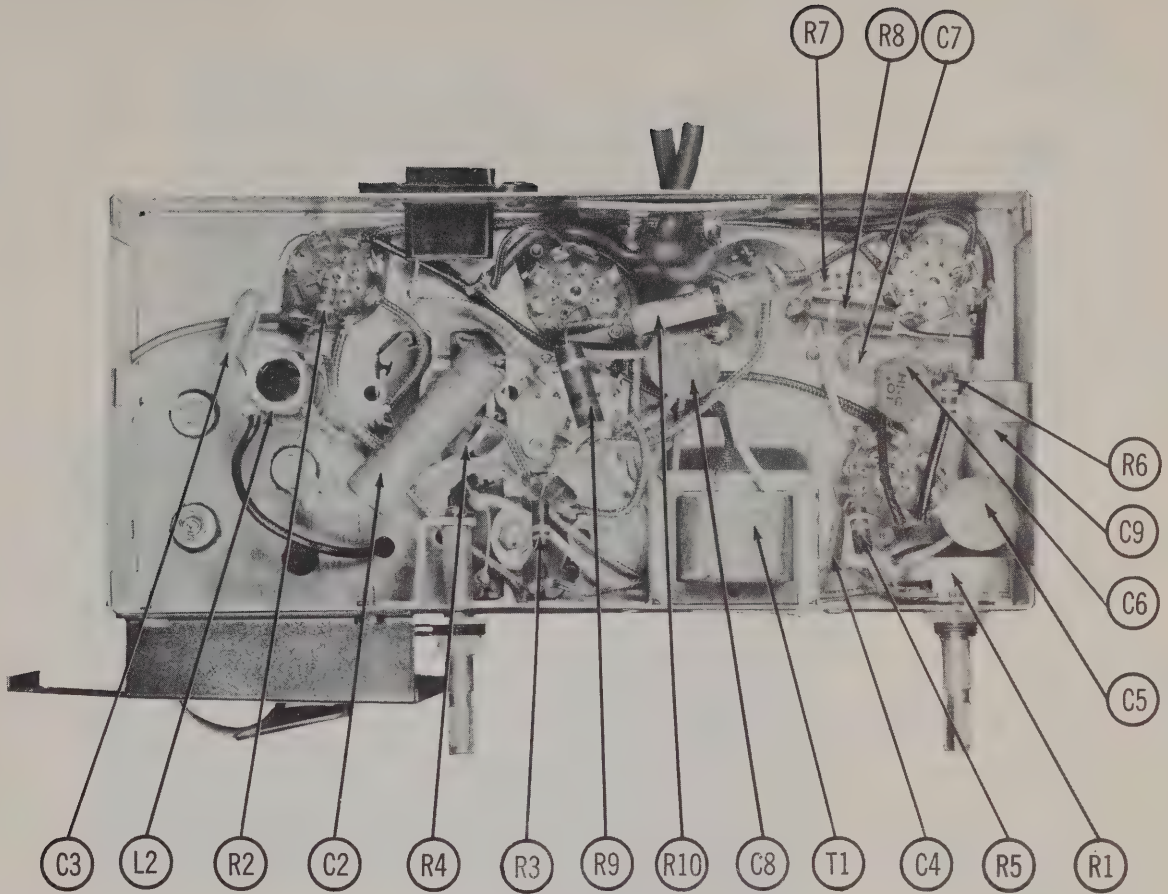
\* Model L515 uses Part # S-20393 in this application.

† Use adaptor plate and cut out center spade bolt mounting support.

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M1	Tuning Cap.	22-2386	2 Section (94-457MMF, 27-195MMF)
M2A	Clock	S-19226	Model L520
B	Clock	S-19225	Model L520W
C	Clock	S-19224	Model L520G
D	Clock	S-19227	Model L520F
E	Clock	S-20598	Model L520R
F	Clock	S-18534	Model L515
G	Clock	S-18629	Models L515Y, W, G, F
	Cabinet	14-1621	Model L520
	Cabinet	14-1623	Model L520W
	Cabinet	14-1624	Model L520G
	Cabinet	14-1625	Model L520F
	Cabinet	14-1647	Model L520R
	Cabinet	14-1385	Model L515
	Cabinet	14-1612	Model L515W
	Cabinet	14-1613	Model L515F
	Cabinet	14-1614	Model L515G
	Cabinet	14-1367	Model L515Y
	Knob	46-904	(3) Clock Model L520, L515
	Knob	46-940	(3) Clock Model L520W
	Knob	46-985	(3) Clock Model L520G
	Knob	46-961	(3) Clock Model L520F
	Knob	46-905	(3) Clock Model L520R, L515W, F, G, Y
	Knob	46-1222	(2) Volume & tuning Model L520
	Knob	46-1224	(2) Volume & tuning Model L520W
	Knob	46-1225	(2) Volume & tuning Model L520G
	Knob	46-1226	(2) Volume & tuning Model L520F
	Knob	46-1262	(2) Volume & tuning Model L520R
	Knob	46-943	(2) Volume & tuning Model L515
	Knob	46-941	(2) Volume & tuning Models L515W, F, G, Y
	Crystal	192-145	(2) Clock face & tuning dial (Model L520)
	Crystal	192-145	(2) Clock face & tuning dial (Model L515)

CHASSIS—BOTTOM VIEW





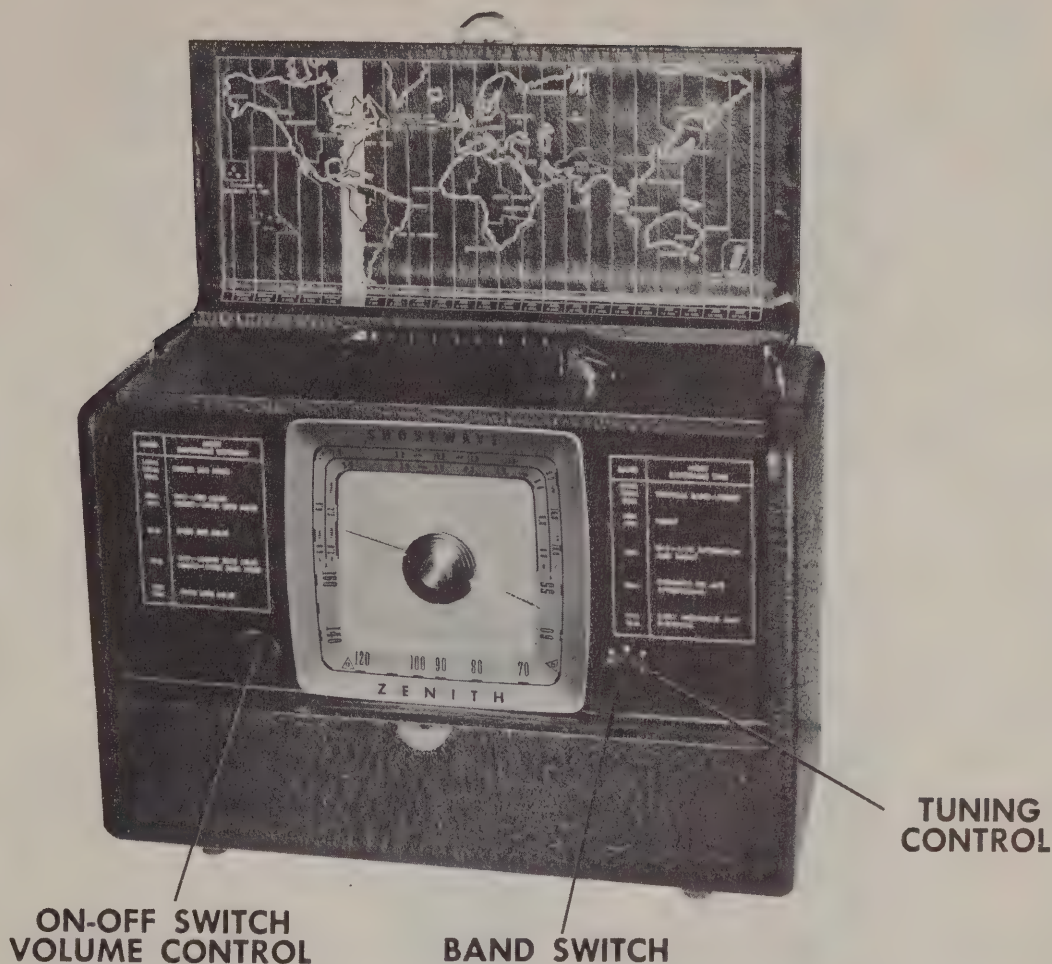


RESISTANCE READINGS									
	Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12B56	22KΩ	5Ω	28Ω	40Ω	1KΩ	1KΩ	1KΩ	2.7Meg
V 2	12BA6	2.7Meg	0Ω	14Ω	28Ω	1KΩ	1KΩ	1KΩ	68Ω
V 3	12AT6	4.7Meg	0Ω	0Ω	14Ω	0Ω	0Ω	500KΩ	1470KΩ
V 4	50C5	150Ω	470KΩ	40Ω	10Ω	470KΩ	1KΩ	1KΩ	1250Ω
V 5	35W4	†30Ω	INF	110Ω	155Ω	155Ω	145Ω	145Ω	300KΩ

† MEASURED FROM PIN 7 OF V5



ZENITH  
MODEL L507 (Ch. 5L42)



ZENITH  
MODEL L507 (Ch. 5L42)

TRADE NAME	Zenith Model L507 (Ch. 5L42)		
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.		
TYPE SET	Three Power Portable 3 Band Superheterodyne Receiver		
TUBES (Five)	Types 1U4 RF Amp., 1L6 Conv., 1U4 IF Amp., 1U5 Det.-AVC-AF Amp., 3V4 Audio Output		
POWER SUPPLY	110-120 Volts AC-DC (220 Volts with Adaptor) (or) 9 Volts "A" Supply & 90 Volts "B" Supply in Pack form		
RATING	.12 Amp. @ 117 Volts AC	(or)	50MA @ 9 Volts DC & 16MA @ 90Volts DC
TUNING RANGE - BROADCAST	540-1600KC	SHORT WAVE	"B" Band (2-6MC) "C" Band (6-18MC)

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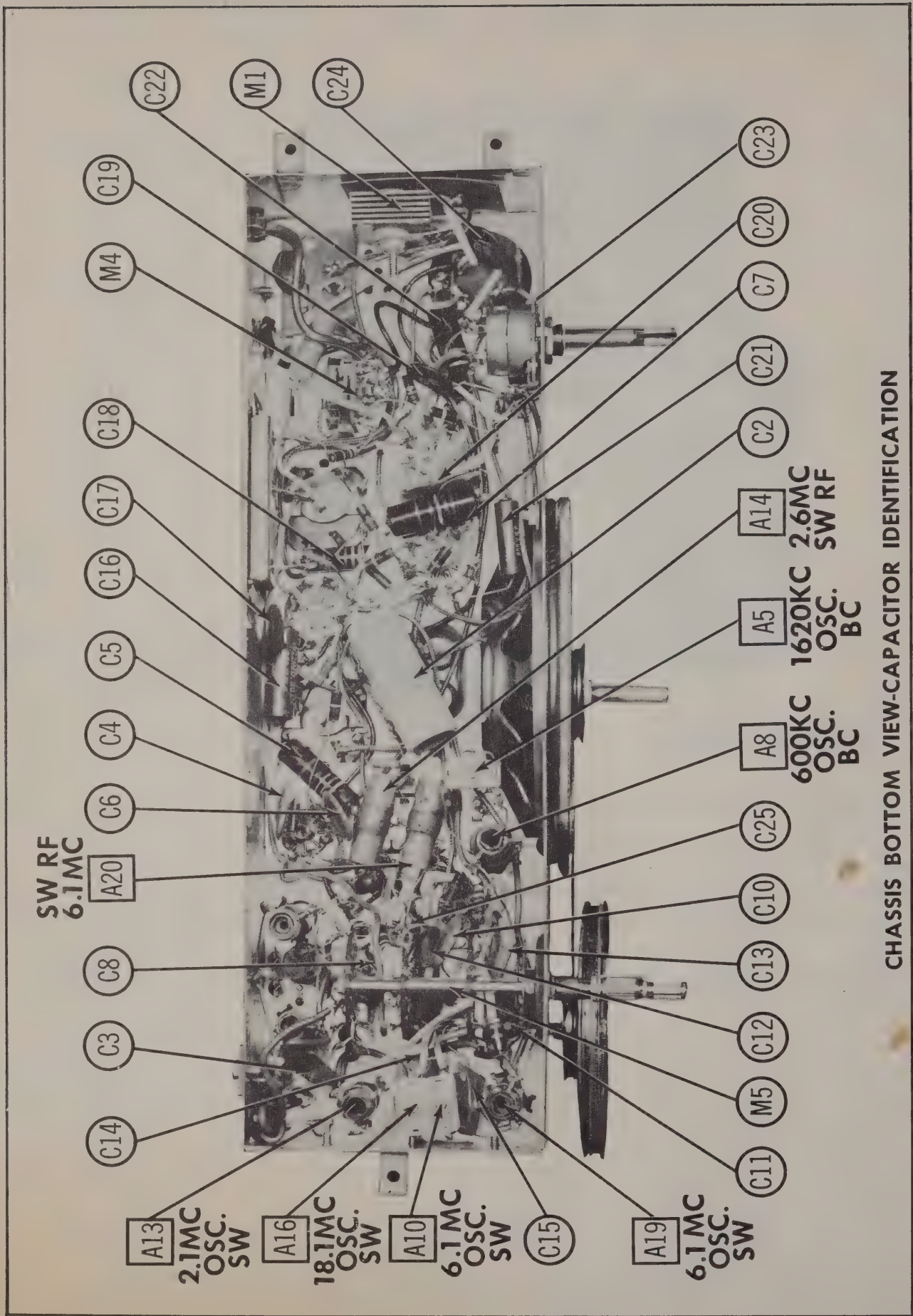
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DATE 2-54

SET 229

FOLDER 18



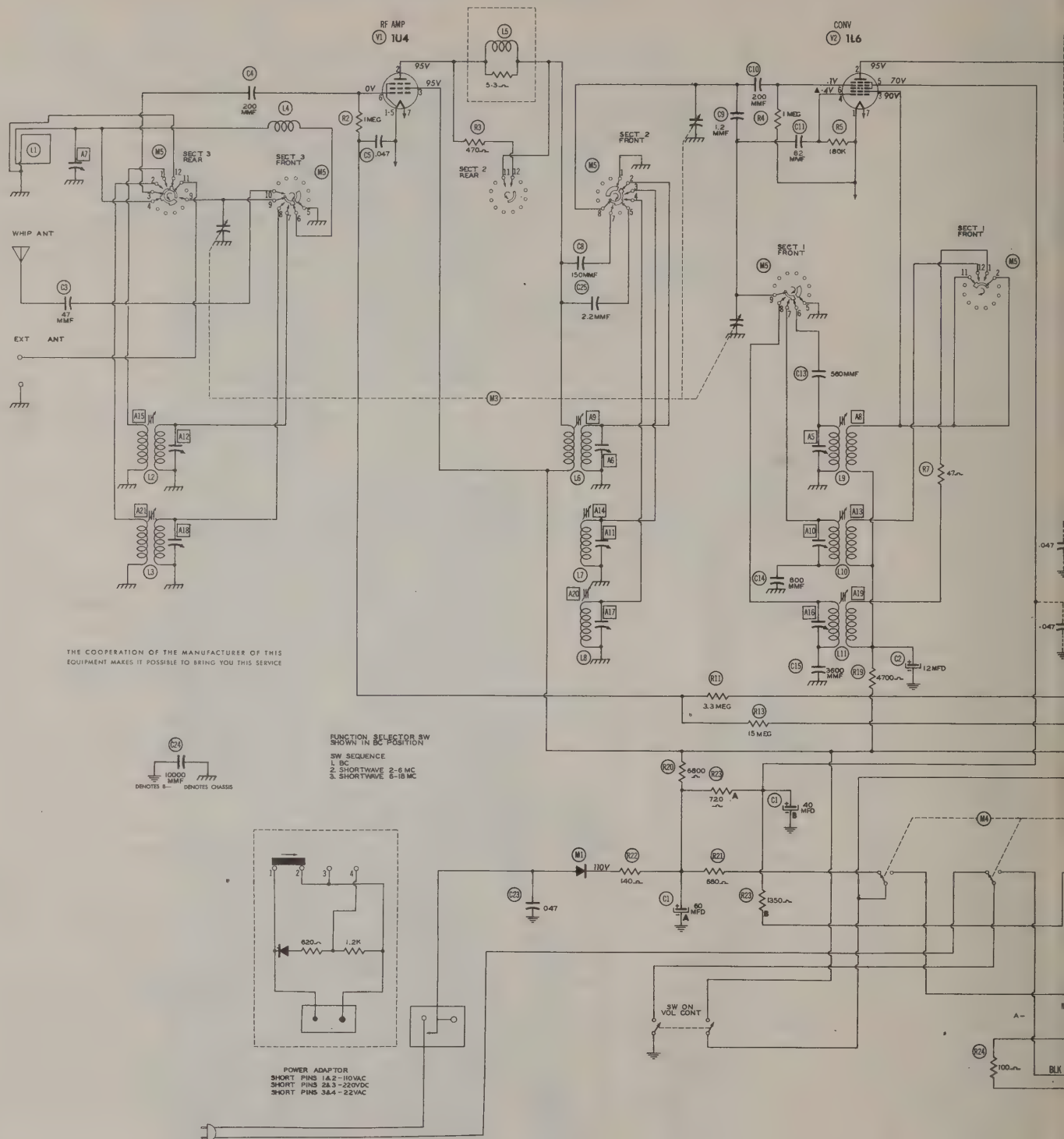


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

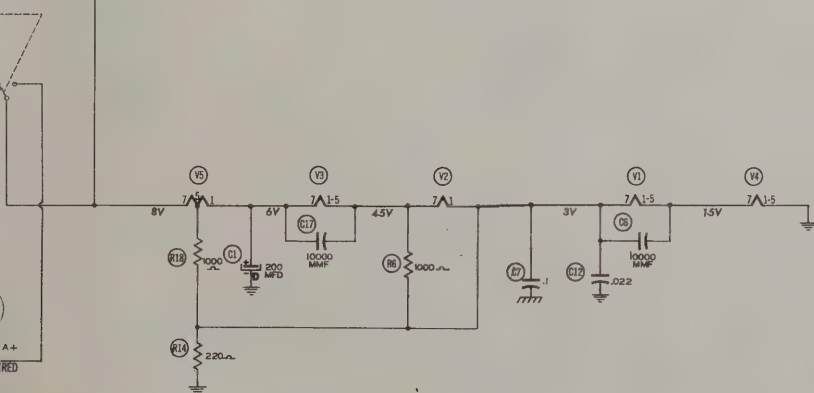
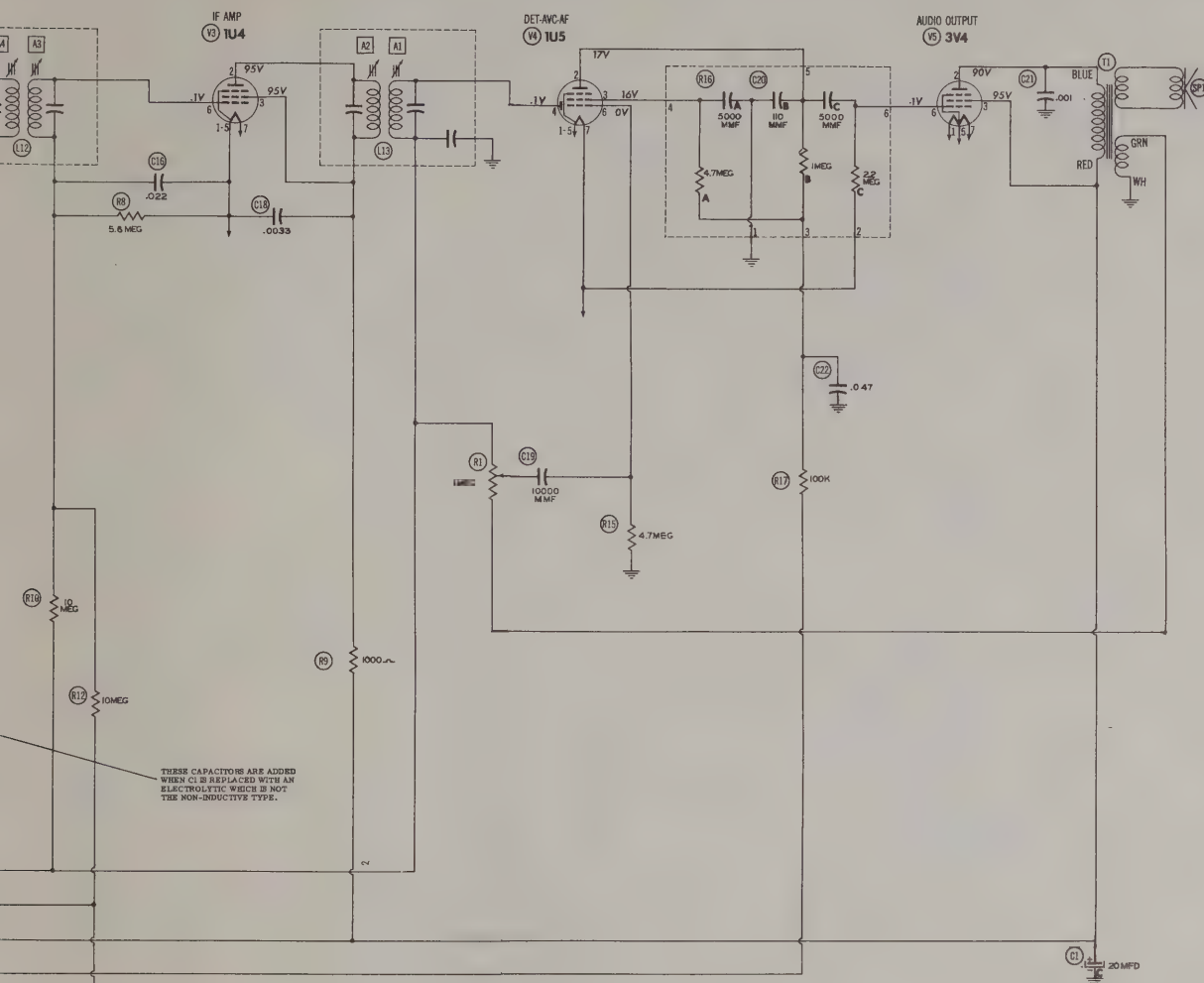
# ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT							
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting. Zenith tuning wrench 68-19 or equivalent should be used when aligning IF transformers. With tuning gang fully closed set pointer parallel with base of chassis.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. .47MFD	High side to pin 6 (grid) of 1L6 (V2). Low side to B-.	455KC (400 $\mu$ Mod)	"A"	Tuning gang fully closed	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy antenna to 200 MMF to reduce hum modulation.
2. "	High side to pin 6 (grid) of 1U4 (V1). Low side to B-.	1620KC	"	Tuning gang fully open	"	A5	"
3. "	"	1400KC	"	Tune to 1400KC signal	"	A6, A7	"
4. "	"	600KC	"	Tune to 600KC signal	"	A8	Adjust for maximum deflection while rocking tuning gang thru 600KC signal.
5. "	"	600KC	"	"	"	A9	A9 is preset at the factory and should not require adjustment, however it may be peaked at 600KC if necessary.
6. Repeat steps 2, 3, and 4.							
RF ALIGNMENT (Band "B")							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
7. 20MMF	High side to wave rod antenna lug socket. Low side to chassis.	6.1MC	"B"	Tuning gang fully open	Across voice coil	A10	Adjust for maximum deflection.
8. "	"	5.5MC	"	Tune to 5.5MC signal	"	A11, A12	Adjust for maximum deflection in order given while rocking tuning gang thru 5.5MC signal.
9. "	"	2.1MC	"	Tune to 2.1MC signal	"	A13	Adjust for maximum deflection while rocking tuning gang thru 2.1MC signal.
10. Repeat steps 7, 8 and 9.							
11. 20MMF	High side to wave rod antenna lug socket. Low side to chassis.	2.1MC	"	Tune to 2.1MC signal	"	A14, A15	A14 and A15 are preset at the factory and should not require adjustment, however, they may be peaked at 2.1MC if necessary.
RF ALIGNMENT (Band "C")							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
12. 20MMF	High side to wave rod antenna lug socket. Low side to chassis.	18.1MC	"C"	Tuning gang fully open	Across voice coil	A16	Adjust for maximum deflection.
13. "	"	16MC	"	Tune to 16MC signal	"	A17, A18	Adjust for maximum deflection in order given while rocking tuning gang through 16MC signal.
14. "	"	6.1MC	"	Tune to 6.1MC signal	"	A19	Adjust for maximum deflection while rocking tuning gang thru 6.1MC signal.
15. Repeat steps 12, 13 and 14.							
16. 20MMF	High side to wave rod antenna lug socket. Low side to chassis.	6.1MC	"	Tune to 6.1 MC signal	"	A20, A21	A20 and A21 are preset at the factory and should not require adjustment, however, they may be peaked at 6.1MC, if necessary.





- 1- DC voltage measurements are at 20,000 ohms per volt, AC voltages measured at 1000 ohms per volt.
- 2- Socket connections are shown as bottom views.
- 3- Measured values are from socket pin to common negative.
- 4- Line voltage maintained at 117 volts for voltage readings.
- 5- Nominal tolerance on component values makes possible a variation of  $\pm 15\%$  in voltage and resistance readings.
- 6- Volume control at maximum, no signal applied for voltage measurements.



# RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1U4	*	†820Ω	†820Ω	3.1Meg	*	3.9Meg	*
V 2	1L6	*	†820Ω	†5KΩ	200KΩ	†860Ω	1Meg	*
V 3	1U4	*	†1.8KΩ	†1.8KΩ	25Ω	*	2.3Meg	*
V 4	1U5	*	†1.1Meg	†4.8KΩ	1Meg	3Meg	4.7Meg	*
V 5	3V4	*	†1.7KΩ	†820Ω	2.3Meg	*	1.9Meg	*

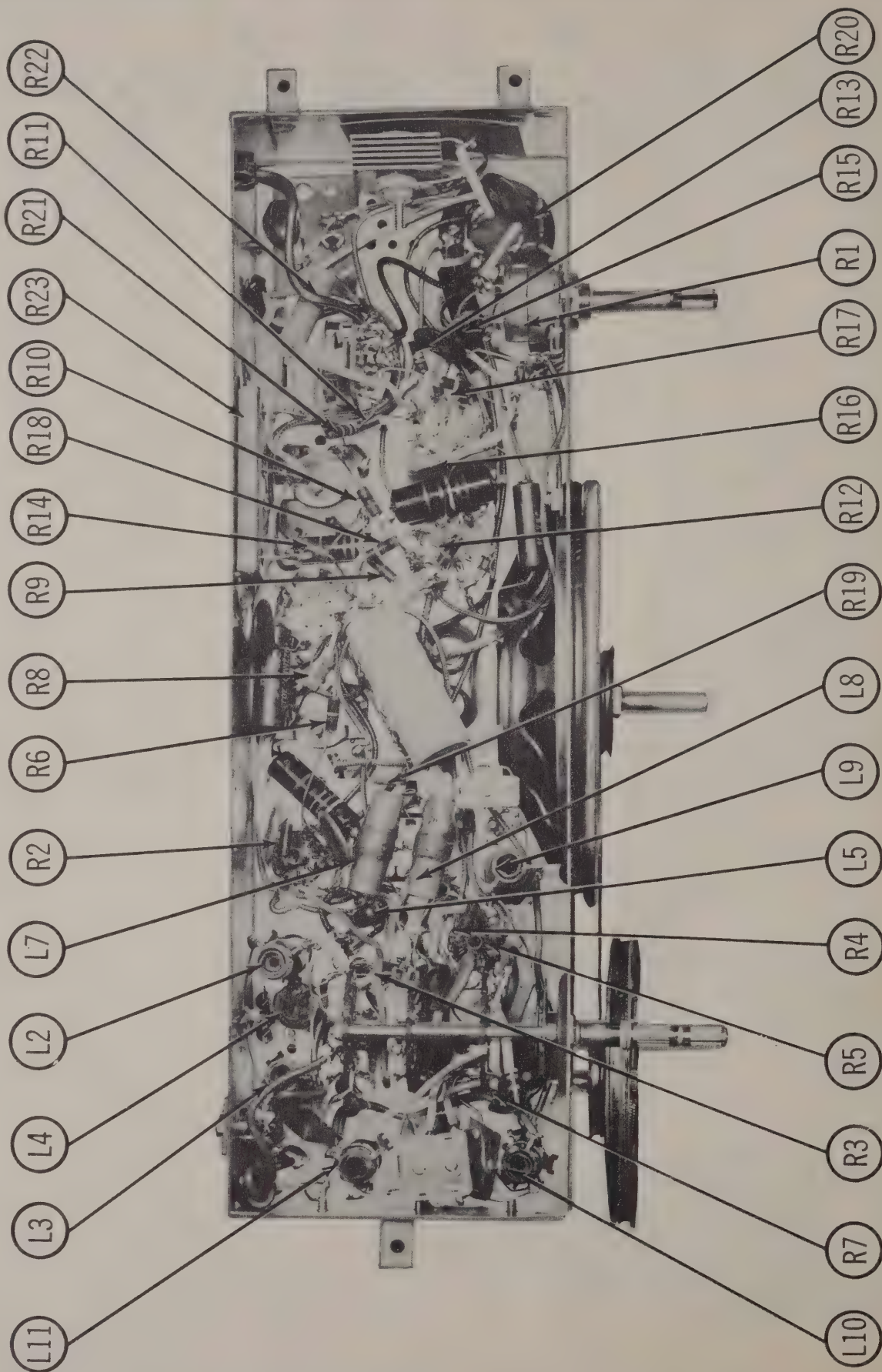
\* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE

† MEASURED FROM OUTPUT OF M1

▲ TAKEN WITH VACUUM TUBE VOLTMETER



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



# **PARTS LIST AND DESCRIPTIONS** TUBES (SYLVANIA, GENERAL ELECTRIC, WESTINGHOUSE)

ITEM No.	USE	REPLACEMENT DATA			NOTES
		ZENITH PART No.	STANDARD REPLACEMENT	RETMA BASE TYPE	
V1	RF Amplifier	1U4	1U4	6AR	
V2	Converter	1L6	1L6	7DC	
V3	IF Amplifier	1U4	1U4	6AR	
V4	Det-AVC-AF-Amp.	1U5	1U5	6BW	
V5	Audio Output	3V4	3V4	6BX	

## **CAPACITORS**

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

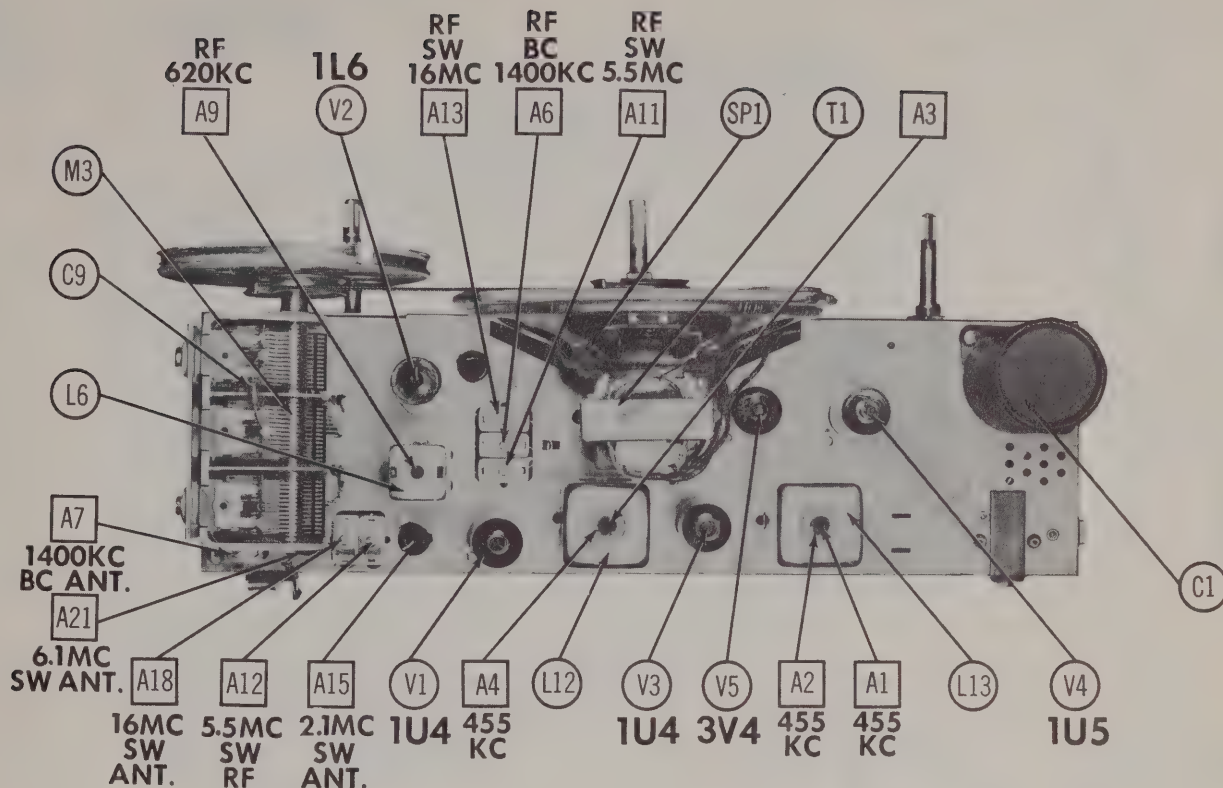
ITEM No.	RATING CAP. VOLT	REPLACEMENT DATA					NOTES
		ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	
C1A	.60	22-2410	AFH4-23		DO30		R1079
C1B	.40						
C1C	.20						
C1D	.10						
C2	12	22-2056	PRS150/12	D8-470	BR1215	TC43	TVA-1407
C3	47	22-1662	1468-00005	TCN-200	SW5Q5	MC225	MS-45
C4	200	22-2472					5TCU-T2
C5	.047	22-1778	P488-047	DD-1032	PTE4S47	PT447	4TM-S47
C6	.0000	22-3	BPD-01	DD-1032	TM5S1	DC-511	5HK-S1
C7	.1	22-1777	P288-1	TCN-150	PTE4P1	PT401	2TM-F1
C8	.150	22-2471					5TCU-T15
C9	1.2	22-1765					
C10	200	22-2472					
C11	.022	22-2485	P488-022	DD-820	PTE4S22	PT4122	5TCU-T2
C12	.022	22-2071					
C13	500	22-1949		D6-561	1W578	MC251	4TM-S22
C14	800	22-2488	1464-0008				MS-38
C15	3600	22-2062					
C16	.022	22-2071	P488-022	DD-203	PTE4S22	PT4122	4TM-S22
C17	10000	22-3	BPD-01	DD-1032	TM5S1	DC-511	5HK-S1
C18	.0033	22-2157	P688-0033	D6-332	PTE6D33	PT6333	5HK-S1
C19	10000	22-3	BPD-01	DD-1032	TM5S1	DC-511	
C20A	5000						*103C3
C20B	110	*105-31	*PA-117	*PC-91			
C21	.001	22-2127	P688-001	D8-102	PTE6D1	PT621	6TM-D1
C22	.047	22-1778	P488-047		P4S5	PT4147	4TM-S47
C23	.047	22-1778	P488-047		P4S5	PT4147	4TM-S47
C24	10000	22-3	BPD-01	DD-1032	TM5S1	DC-511	5HK-S1
C25	2.2	22-1763		TCZ-2.2			5TCU-T2

\* Items C20A, C20B, C30C and R16A, R16B, R16C are combined in one unit.

## **CONTROLS**

ITEM No.	RATING RESIST. ANCE	REPLACEMENT DATA				INSTALLATION NOTES
		ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1Meg	63-2852	Q11-137	AG-61-S	AB-69	Volume
R1B	Shatt	Not Req.	Not Req.	KSS-3	AK-4	Attach to R1A
R1C	Switch	Not Req.	76-2	SWB-2	US-27	US-27

## **CHASSIS—TOP VIEW**





PARTS LIST AND DESCRIPTIONS

RESISTORS

ITEM No.	RATING OHMS WATT	REPLACEMENT DATA		ITEM No.	RATING OHMS WATT	REPLACEMENT DATA		NOTES
		ZENITH PART No.	IRC PART No.			ZENITH PART No.	IRC PART No.	
R2	1Meg	63-1812	BTS-1Meg	R15	4.7Meg	63-1940	BTS-4.7Meg	
R3	470Ω	63-1771	BTS-470	R16A	1Meg	* 105-31	BTS-1Meg	
R4	1Meg	63-1812	BTS-1Meg	B	2Meg	63-1970	BTS-2Meg	
R5	180KΩ	63-1880	BTS-180K	C	100KΩ	63-1785	BTS-100K	
R6	1000Ω	63-1785	BTS-1000	R17	1000Ω	63-1814	BTS-1000	
R7	47Ω	63-1729	BTS-47Ω	R18	4700Ω	63-1921	BTS-4700	
R8	5.0Meg	63-1843	BTS-5.0Meg	R19	8900Ω	63-1778	BTS-8900	
R9	1000Ω	63-1786	BTS-1000	R20	8900Ω	63-2014	BTS-8900	
R10	10Meg	63-1854	BTS-10Meg	R21	140Ω	63-2010	BTS-140Ω	
R11	3.3Meg	63-1933	BTS-3.3Meg	R22A	720Ω	63-1744	BTS-720Ω	
R12	10Meg	63-1854	BTS-10Meg	B	1350Ω			
R13	15Meg	63-1960	BTS-15Meg	R23A	100Ω			
R14	220Ω	63-1757	BTS-220	R24	100Ω			

Items R16A, R18B, R18C, C20A, C20B, C20C are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI. SEC.	RATING V. C. IMP.	REPLACEMENT DATA		NOTES
			ZENITH PART No.	STANCOR PART No.	
T1	10KΩ 3.2Ω	900Ω	95-1345		

SPEAKER

ITEM No.	RATINGS SIZE FIELD V. C. IMP.	REPLACEMENT DATA		NOTES
		ZENITH PART No.	QUAM PART No.	
SP1	5 1/4" PM 3.2Ω	49-734	52A1	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ZENITH PART No.	MEISSNER PART No.	
L1	BC Loop Ant.	0Ω	50	8-20054		
L2	SW Ant. Coll	30	1.6Ω	8-19987		
L3	SW Ant. Coll	20	.1Ω	8-19988		
L4	Ant. Loading	1.6Ω		19-3036	TV-180	2-6MC 6-18MC
L5	RF Choke	6Ω		8-16047		45 Microhenries Wound on resistor
L6	BC RF Coll	100Ω	4.6Ω	8-20076		
L7	SW RF Coll	80		8-19981		
L8	SW RF Coll	0Ω		8-19980		
L9	BC Osc. Coll	3.2Ω	5.5Ω	8-19993	BC-381 *	2-6MC 6-18MC
L10	SW Osc. Coll	.6Ω	.4Ω	8-19993		
L11	SW Osc. Coll	.9Ω	0Ω	8-19992		
L12	Input IF	26Ω	26Ω	18-6666	BC-368	2-6MC 6-18MC
L13	Output IF	26Ω	26Ω	18-6770 †	BC-355 †	

\* Disregard tap on secondary winding.

† Use adaptor plate and cut out center spade bolt mounting support.

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	ZENITH PART No.	REPLACEMENT DATA		NOTES
			SELETRON PART No.	FEDERAL PART No.	
M1	.086A	212-5	5M4	1003A	8575

CHASSIS—TOP VIEW

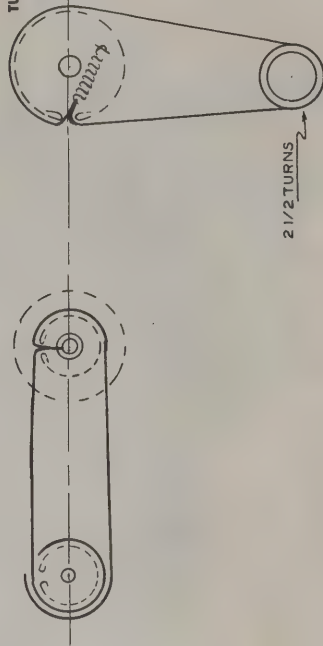
BATTERIES

ITEM No.	VOLTAGE	ZENITH PART No.	REPLACEMENT DATA				INSTALLATION NOTES
			"A"	"B"	"A.B."	"A.B."	
M2	9V-A 90V-B				757	757	

MISCELLANEOUS

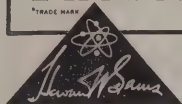
ITEM No.	PART NAME	ZENITH PART No.	NOTES
M3	Tuning capacitor	22-2476	3 section each 10-447MMF
M4	Switch, power select	95-520	
M5	Switch, band	95-528	
A5	Trimmer cap	22-2473	Function selector
A10, A16	Trimmer cap	22-2474	Single section with bracket
	Trimmer cap	22-2475	Dual section with bracket
	Cabinet	14-1863	Single section (6 used)
	Dial scale	26-501	
	Knob, tuning	46-1172	
	Knob, band switch	46-1173	
	Knob, volume		
	off-on	S-22052	

TUNING GANG FULLY CLOSED



DIAL CORD STRINGING

PHOTOFACT\* Folder



with CIRCUITRACE\*

ZENITH MODEL  
Royal 750L (Ch. 8AT41Z2)ZENITH MODEL  
Royal 750L (Ch. 8AT41Z2)ZENITH MODEL  
Royal 750L (Ch. 8AT41Z2)

TRADE NAME Zenith Model Royal 750L (CH. 8AT41Z2)  
MANUFACTURER Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois  
TYPE SET Battery Operated Portable Transistorized AM Receiver

POWER SUPPLY 9 Volts DC  
TUNING RANGE—BROADCAST 540-1600KC

RATING 7.2MA @ 9 Volts DC (No Signal, Min Volume)  
13MA @ 9 Volts DC (Signal, Normal Volume)

## ALIGNMENT INSTRUCTIONS

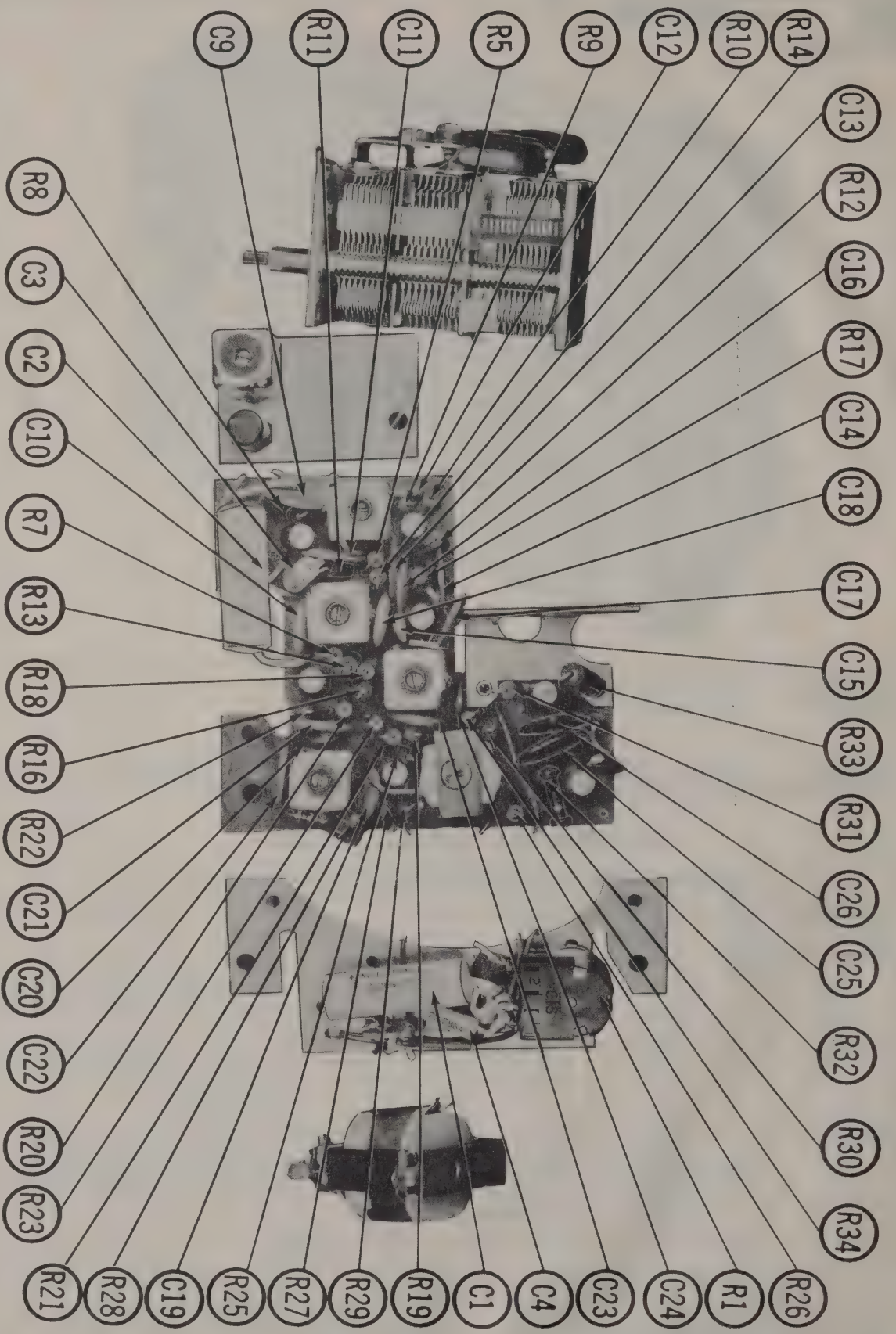
ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT						
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400% Mod.)	Tuning Gang Fully Open	Across Voice Coil	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1620KC	"	"	A4	"
3.	"	535KC	Tuning Gang Fully Closed	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output while rocking tuning gang. Repeat Steps 2 & 3.
4.	"	1260KC	Tune to 1260KC Signal	"	A6, A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
5.	"	600KC	Tune to 600KC Signal	"	A8	"

## HOWARD W. SAMS &amp; CO., INC. Indianapolis 6, Indiana

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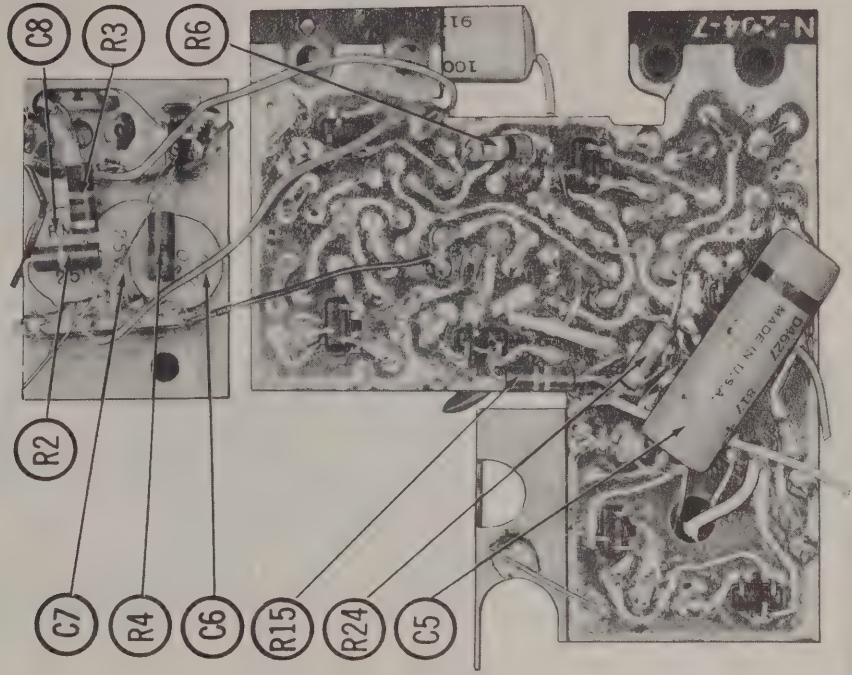
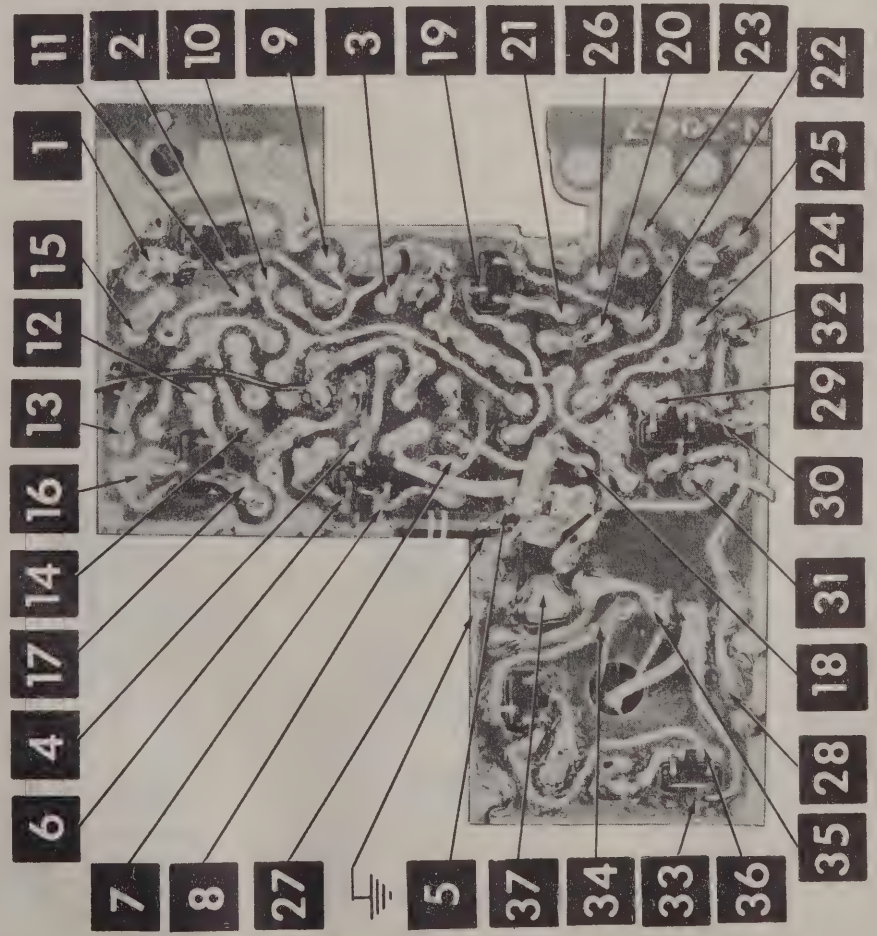
CHASSIS-TOP VIEW

# PARTS LIST AND DESCRIPTIONS

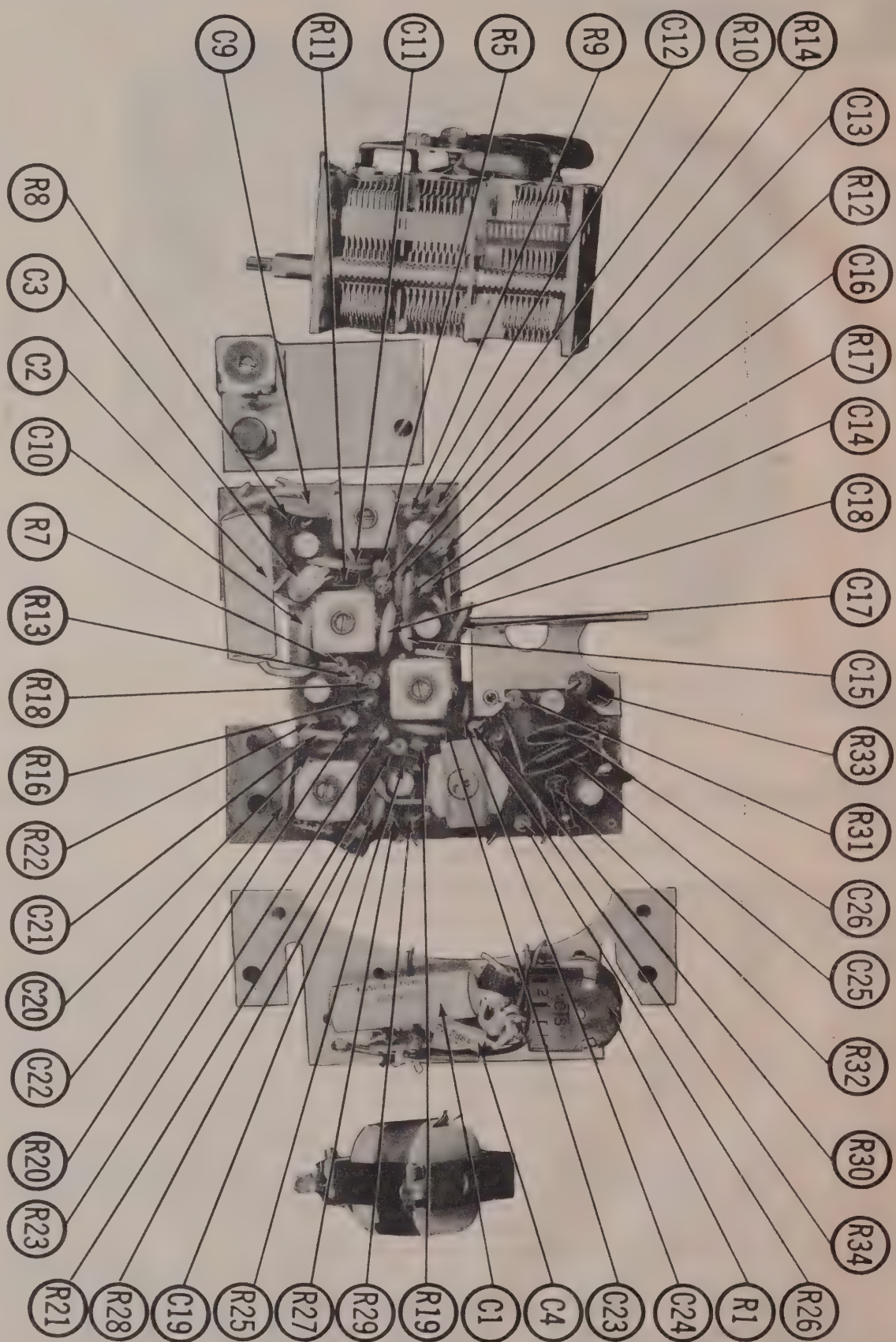
## TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	121-63	RF Amplifier		2N544	2N487	2N370	PNP
X2	121-62	Mixer		2N411	2N486	2N411	PNP
X3	121-65	Oscillator		2N409	2N483	2N409	PNP
X4	121-73	1st IF Amplifier		2N409	2N483	2N409	PNP
X5	121-74	2nd IF Amplifier		2N409	2N483	2N409	PNP

# CHASSIS—TOP VIEW







CHASSIS-TOP VIEW



## PARTS LIST AND DESCRIPTIONS

## TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			CBS PART No.	PAYTHEON PART No.	SYLVANIA PART No.	
X1	121-63	RF Amplifier	2N544	2N487	2N370	PNP
X2	121-62	Mixer	2N411	2N486	2N411	PNP
X3	121-65	Oscillator	2N409	2N483	2N409	PNP
X4	121-73	1st IF Amplifier	2N409	2N483	2N409	PNP
X5	121-74	2nd IF Amplifier	2N409	2N483	2N409	PNP
X6	121-64	Driver	2N407	2N482	2N407	PNP
X7	121-61	Output	2N407	2N482	2N407	PNP
X8	121-61	Output	2N407	2N482	2N407	PNP

## ELECTROLYTIC CAPACITORS

ITEM No.	BATING CAP.	VOLT.	REPLACEMENT DATA			
			ZENITH PART No.	AEROVOX PART No.	CORNELL DUBIER PART No.	SPRAGUE PART No.
C1	100	10	22-3023	EW10000	NL100-10	ML100-15
C2	100	10	22-3023	EW10000	NL100-10	ML100-15
C3	3	12	22-2884	XPP-12003	NL3-10	ML4-15
C4	3	12	22-2884	XPP-12003	NL3-10	ML4-15
C5	50	12	22-2883	SRE12V50	NL50-10	ML50-15

## FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	BATING CAP.	VOLT.	REPLACEMENT DATA				NOTES
			ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBIER PART No.	
C6	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C7	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C8	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C9	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C10	20000		22-2885	BPD-02	DD-203	BYB6S2	5HK-S2
C11	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C12	1000		22-2729	BPD-001	DD-102	DC521	5HK-D1
C13	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C14	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C15	10		22-2731	N750-D110	DTN-10		5HK-S5
C16	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C17	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C18	20000		22-2885	BPD-02	DD-203	BYB6S2	5HK-S2
C19	20000		22-2885	BPD-02	DD-203	BYB6S2	5HK-S2
C20	20000		22-2885	BPD-02	DD-203	BYB6S2	5HK-S2
C21	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C22	50000		22-2728	BPD-05	DF-503	DF-503	5HK-S5
C23	20000		22-2885	BPD-02	DD-203	BYB6S2	5HK-S2
C24	10000		22-3010	BPD-01	DD-103	BYA10S1	5HK-S1
C25	1000	1000	22-17	HVD-15-1000	DD-102	BYA10D1M	5HK-D1
C26	1000	1000	22-17	HVD-15-1000	DD-102	DC3021	5HK-D1

## CONTROLS

ITEM No.	RESISTANCE	BATING WATTS	REPLACEMENT DATA			INSTALLATION NOTES
			ZENITH PART No.	CENTRALAB PART No.	IRC PART No.	
R1A	5000Ω	1/2	63-4035①			Volume

① Part #63-4094 may be used in some versions.

## PARTS LIST AND DESCRIPTIONS (Continued)

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	WATT	NOTES	ITEM No.	RATING OHMS	WATT	NOTES
R2	1000Ω		63-1786	R19	3900Ω		63-1810
R3	2200Ω		63-1799	R20	500Ω		63-1817
R4	500Ω		63-1775	R21	500Ω		63-1775
R5	1000Ω		63-1786	R22	820Ω		63-1822
R6	100Ω		63-1809	R23	470Ω		63-1771
R7	500Ω		63-1809	R24	470Ω		63-1771
R8	500Ω		63-1809	R25	68K		63-1862
R9	22K		63-1841	R26	5000Ω		63-1715
R10	4700Ω		63-1813	R27	22Ω		63-1715
R11	500Ω		63-1775	R28	680Ω		63-1778
R12	1000Ω		63-1786	R29	3300Ω		63-1806
R13	180K		63-1880	R30	5000Ω		63-1817
R14	6800Ω		63-1820	R31	820Ω		63-1782
R15	220K		63-1883	R32	Thermistor	1	63-3665
R16	1000Ω		63-1786	R33	4, 7Ω		63-3665
R17	820Ω		63-1782	R34	100Ω		63-1744
R18	33K		63-1848				

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			NOTES
		ZENITH PART No.	Meissner PART No.	Miller PART No.	
L1	Loopstick	S-43180			
L2	RF Coil	95-1598			
L3	RF Coil	95-1597			
L4	1st IF	95-1594			
L5	2nd IF	95-1595			
L6	3rd IF	95-1596			

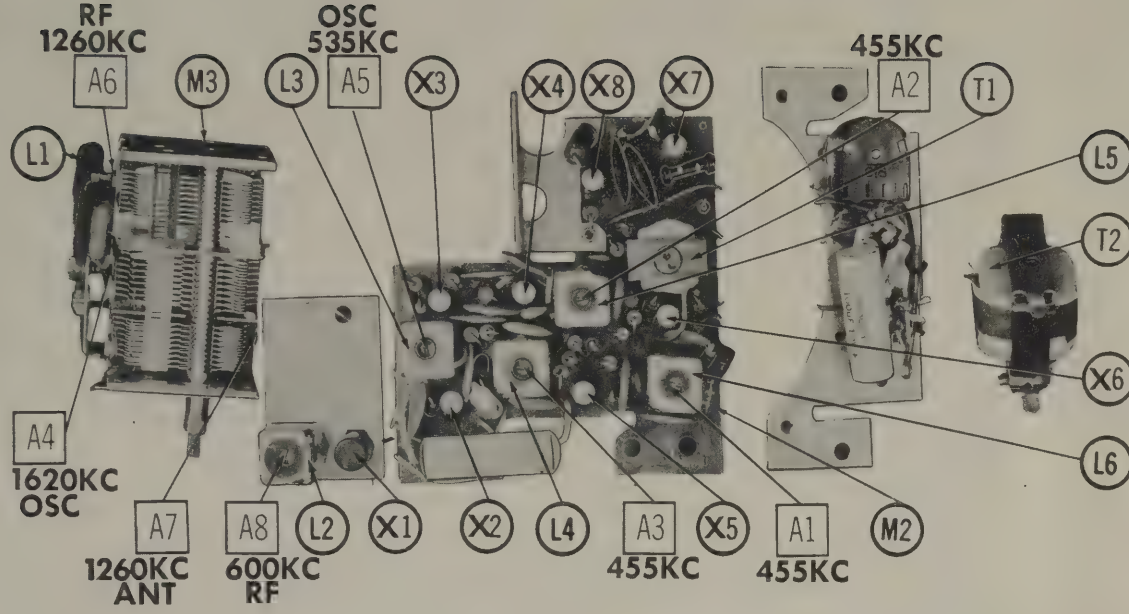
## TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO	REPLACEMENT DATA			NOTES
		ZENITH PART No.	Halldorson PART No.	Merit PART No.	
T1	1.5 : 1	95-1598	GH118①	TA-36①	① Remove Channel Frame

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA			NOTES
		ZENITH PART No.	Halldorson PART No.	Merit PART No.	
T2	450Ω 3-4Ω	95-1588			

## CHASSIS—TOP VIEW



## SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA			NOTES
		SIZE	FIELD	QUAM PART No.	
SP1	4"	PM	3-4Q	4A07	

## BATTERIES

ITEM No.	VOLTAGE	REPLACEMENT DATA			NOTES
		ZENITH PART No.	BURGESS	EVEREADY	
M1	9V	Z-7①	"A"	"B"	"B"
			1 ①	935 ①	M-14 ① ② 6 Used

## CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		ZENITH PART No.	CBS PART No.	SYLVANIA PART No.	
M2	1N87G	103-19	1N80	1N295	Detector (Pigtail)

## MISCELLANEOUS

ITEM No.	PART NAME	REPLACEMENT DATA			NOTES
		ZENITH PART No.	3 Gang (Ant. 10-240mmf, R.F. 10-230mmf)	Earphone	
M3	Tuning Cap. Jack Printed Board	22-3044 44-34 N-204-7			

## CABINETS &amp; CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

ITEM No.	NAME	REPLACEMENT DATA			DESCRIPTION
		PART No.	46-1871	46-1873	
	Knob		46-1871	46-1873	Tuning On-Off-Volume
	Knob		46-1871	46-1873	Dial, Includes Ring Assembly
	Cabinet		14-2359		

## WIRING DATA

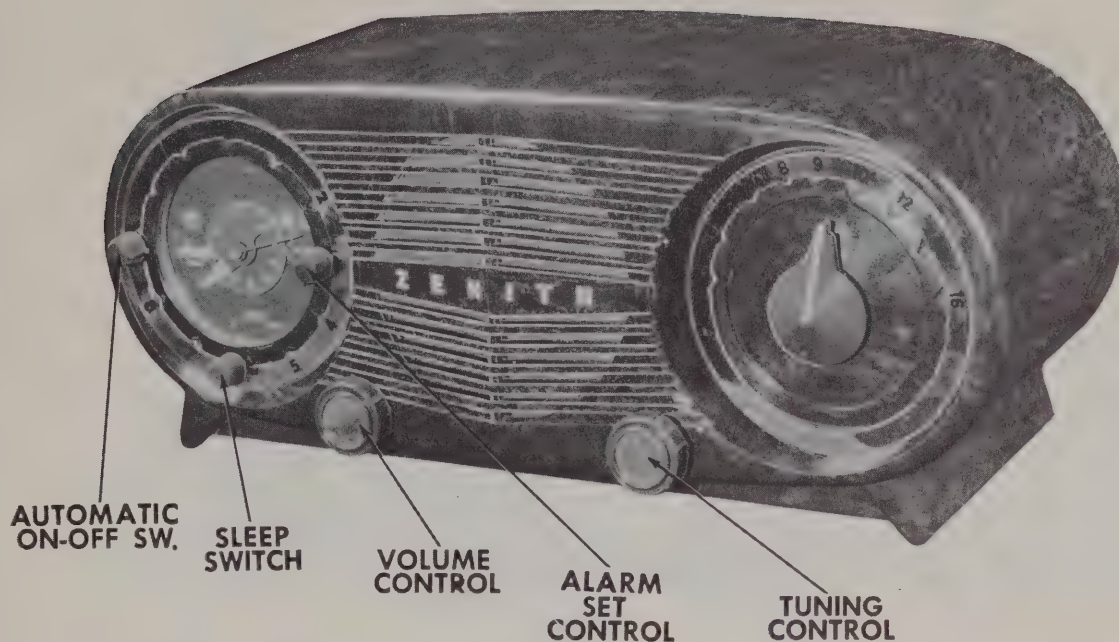
General-use Unshielded Hook-up Wire		..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
		8524 (Stranded) Available in Ten Colors







ZENITH  
MODEL J514 (Ch. 5J03)



ZENITH  
MODEL J514 (Ch. 5J03)

TRADE NAME Zenith Model J514 (Ch. 5J03)  
MANUFACTURER Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.  
TYPE SET AC Operated AM Superheterodyne Receiver with Electric Clock  
TUBES (FIVE) Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier

POWER SUPPLY 110-120 Volts AC-60 Cycle  
TUNING RANGE—BROADCAST 535-1620KC

RATING .280 Amp. @117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B -. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. .5MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B - .	.55KC (400%Mod.)	Tuning gang fully closed.	Across voice coil.	A1, A2	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	Loop	1620KC	Tuning gang fully open .	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1400KC	Tune to 1400KC signal.	"	A6	Adjust for maximum output.

With alignment completed and chassis replaced in cabinet, turn tuning gang fully closed and set pointer parallel with base of cabinet at low frequency end of dial.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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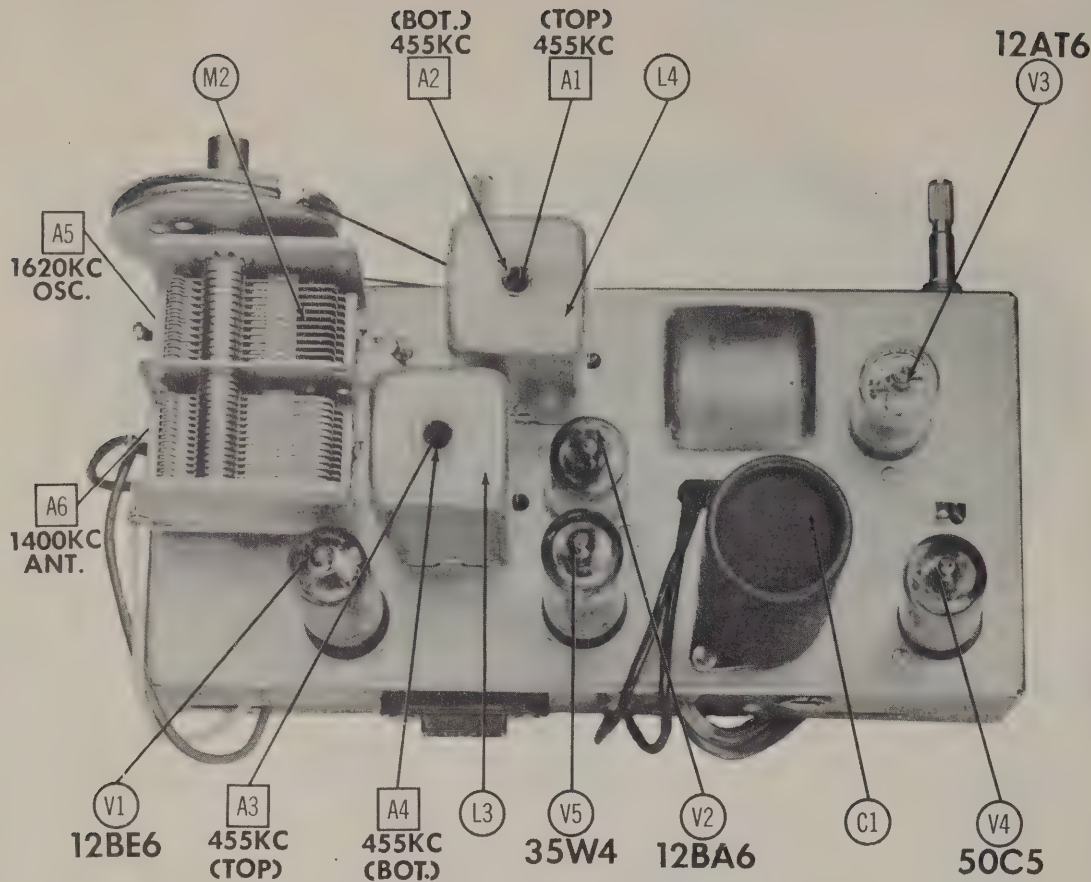
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PARTS LIST AND DESCRIPTIONS  
TUBES (SYLVANIA or Equivalent)

ZENITH  
MODEL J514 (Ch. 5103)

CHASSIS—TOP VIEW



CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
		ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBIER PART No.	ERIE PART No.	
C1A	80 150 40 150 200	23-2351	AF13-10	UP8415		■ Filter ▲ Filter
C2	40 150 200	22-929	P288-05	DF-503	GP2K-251	2TM-55 5GA-T25 SHK-S1 Audio Coupling
C3	250 10000	22-1066	S1250-01	DD-103	821-01	6GA-T47 SHK-S1 Audio Coupling - Note 1
C4	40 10000	22-3	SI-470	DD-103	821-01	6GA-T47 SHK-S1 Audio Coupling - Note 1
C5	10000 400	22-3	P468-01	DD-103	821-01	6GA-T47 SHK-S1 Audio Coupling - Note 1
C6	10000 400	22-1162	P468-01	DD-103	821-01	6GA-T47 SHK-S1 Audio Coupling - Note 1
C7	10000 400	22-3	P468-01	DD-103	821-01	6GA-T47 SHK-S1 Audio Coupling - Note 1
C8	10000 400	22-3	P468-01	DD-103	821-01	6GA-T47 SHK-S1 Audio Coupling - Note 1
C9	10000 400	22-3	P468-01	DD-103	821-01	6GA-T47 SHK-S1 Audio Coupling - Note 1
C10	10000 400	22-3	P468-01	DD-103	821-01	6GA-T47 SHK-S1 Audio Coupling - Note 1

Note 1. Some Models use C-R Unit (M1), Part No. 105-27 Centralab Part No. PC-84

CONTROLS

ITEM No.	RATING	REPLACEMENT DATA				INSTALLATION NOTES
		ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	500KΩ	63-2393	Q11-133	AG-58-S	BSK-60	Volume Control
B	Shaft	Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions

RESISTORS

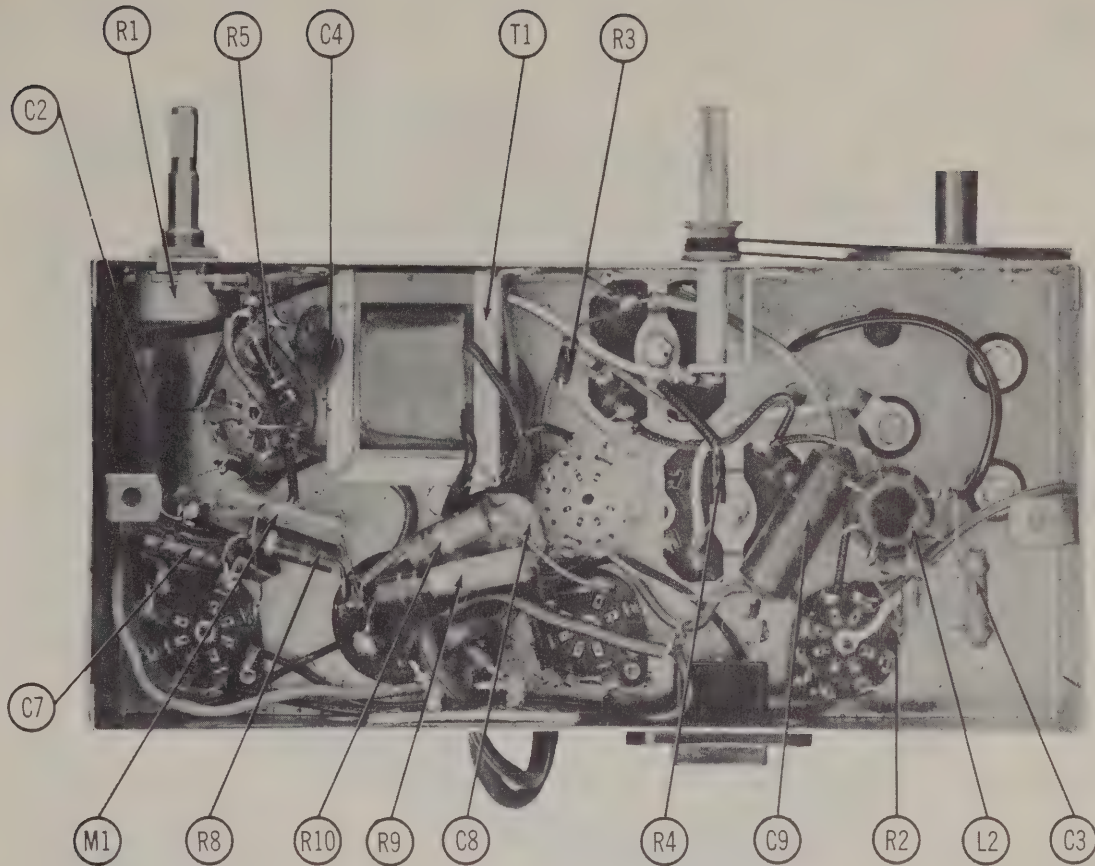
ITEM No.	RATING	REPLACEMENT DATA				IDENTIFICATION CODES
		ZENITH PART No.	IRC PART No.	OSC. GRID	AF AMP. CATHODE	
R2	22KΩ	63-1842	BTS-22K	OSC. GRID	AF AMP. CATHODE	
R3	68Ω	63-1737	BTS-2.2Meg	AF AMP. CATHODE	AF AMP. CATHODE	
R4	2.2Meg	53-1926	BTS-4.7Meg	AF AMP. CATHODE	AF AMP. CATHODE	
R5	4.7Meg	63-1840	BTS-470K	AF AMP. CATHODE	AF AMP. CATHODE	
R6	470KΩ	63-2393	BTS-470K	AF AMP. CATHODE	AF AMP. CATHODE	
R7	470KΩ	63-2393	BTS-470K	AF AMP. CATHODE	AF AMP. CATHODE	
R8	150Ω	63-1877	BTA-150	AF AMP. CATHODE	AF AMP. CATHODE	
R9	22Ω	63-1450	BTA-150	AF AMP. CATHODE	AF AMP. CATHODE	
R10	1000Ω	63-965	BTA-1000	AF AMP. CATHODE	AF AMP. CATHODE	

Note. Some Models use C-R Unit in this application

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING	REPLACEMENT DATA				INSTALLATION NOTES
		ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
T1	4.4KΩ 3.3Ω	95C21293	A3330 ②	A-3031	R0-3 ②	① Alternate Output Transformer ② Drill one new Mfg. hole

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

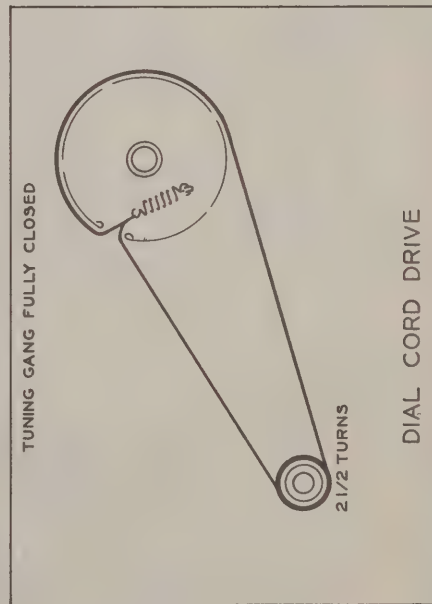
ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	9/16"	49CZ713 49-713 Q	ST-113 Mod. P4-X	4A07	① Alternate Speaker

COILS (RF-IF)

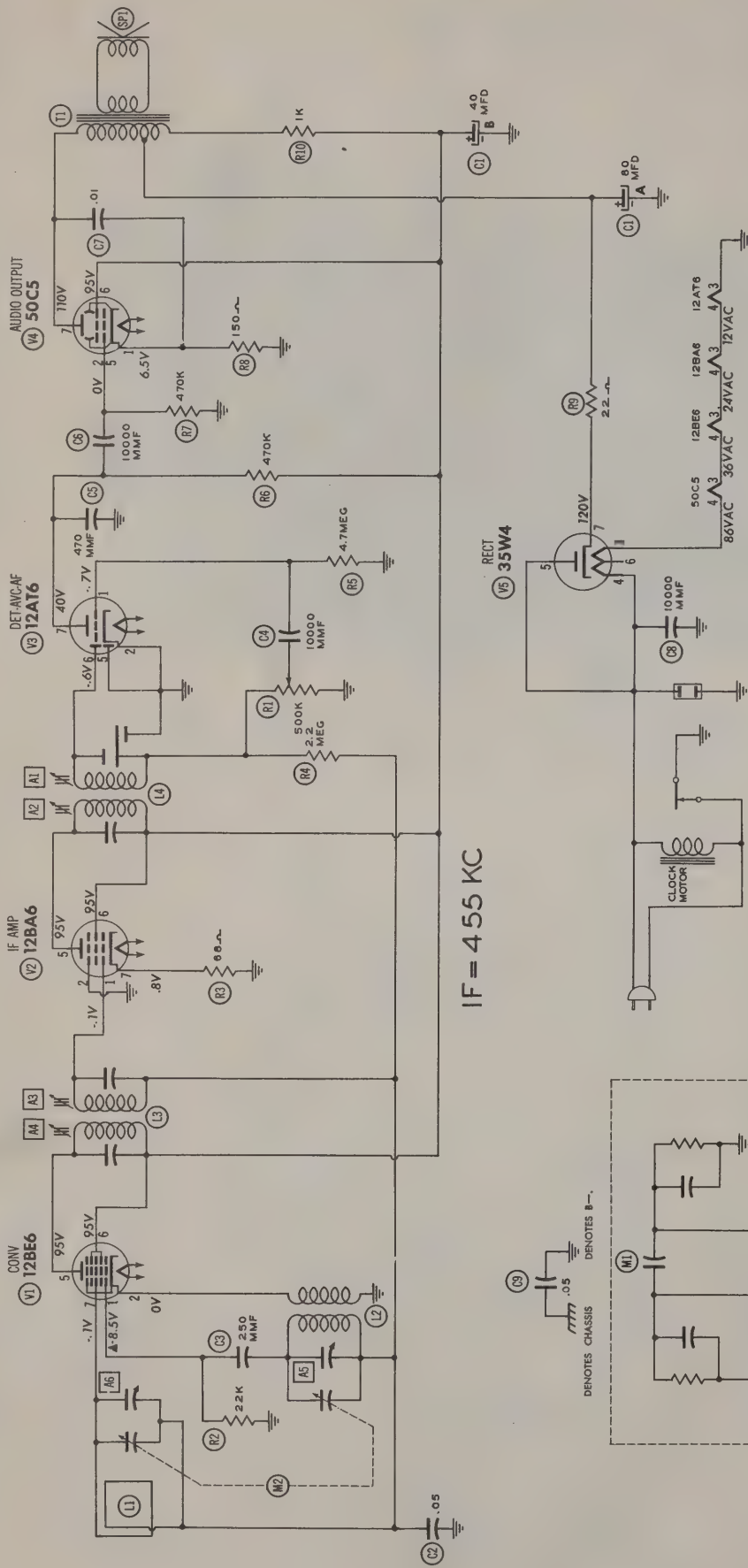
ITEM No.	USE	DC RES.			REPLACEMENT DATA		NOTES
		PRI.	SEC.		ZENITH PART No.	MERIT PART No.	
L1	Loop Ant.	2.30			S-18535		
L2	Osc. Coil	60	6.50		S-18616		
L3	Input IF	150	150		95-1101		
L4	Output IF	150	150		95-1102		

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M1	C-R Unit	105-27	
M2	2 Gang Var. Cap.	22-2386	Used in place of C5, C6, R6 & R7 in some models
	Cabinet	14-1367	Black
	Cabinet	14-1384	White
	Cabinet	14-1385	Walnut
	Cabinet	14-1387	Grey
	Cabinet	14-1388	Green
	Dial Scale	26-466	
	Clock Dial Glass	192-145	White Model
	Clock Assembly	S-18627	Black & Walnut Models
	Clock Assembly	S-18629	Grey Model
	Clock Assembly	S-18678	Green Model
	Clock Assembly	S-18679	







RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	23KΩ	5Ω	24Ω	36Ω	1KΩ	1KΩ	2.7Meg
V 2	12BA6	2.7Meg	0Ω	12Ω	24Ω	1KΩ	1KΩ	88Ω
V 3	12AT6	4.7Meg	0Ω	0Ω	12Ω	0Ω	500KΩ	1470KΩ
V 4	50C5	150Ω	470KΩ	36Ω	88Ω	470KΩ	1KΩ	120Ω
V 5	35W4	125Ω	INE	86Ω	12Ω	103Ω	35KΩ	

† MEASURED FROM PIN 7 OF V3  
TAKEN WITH VACUUM TUBE VOLTMETER

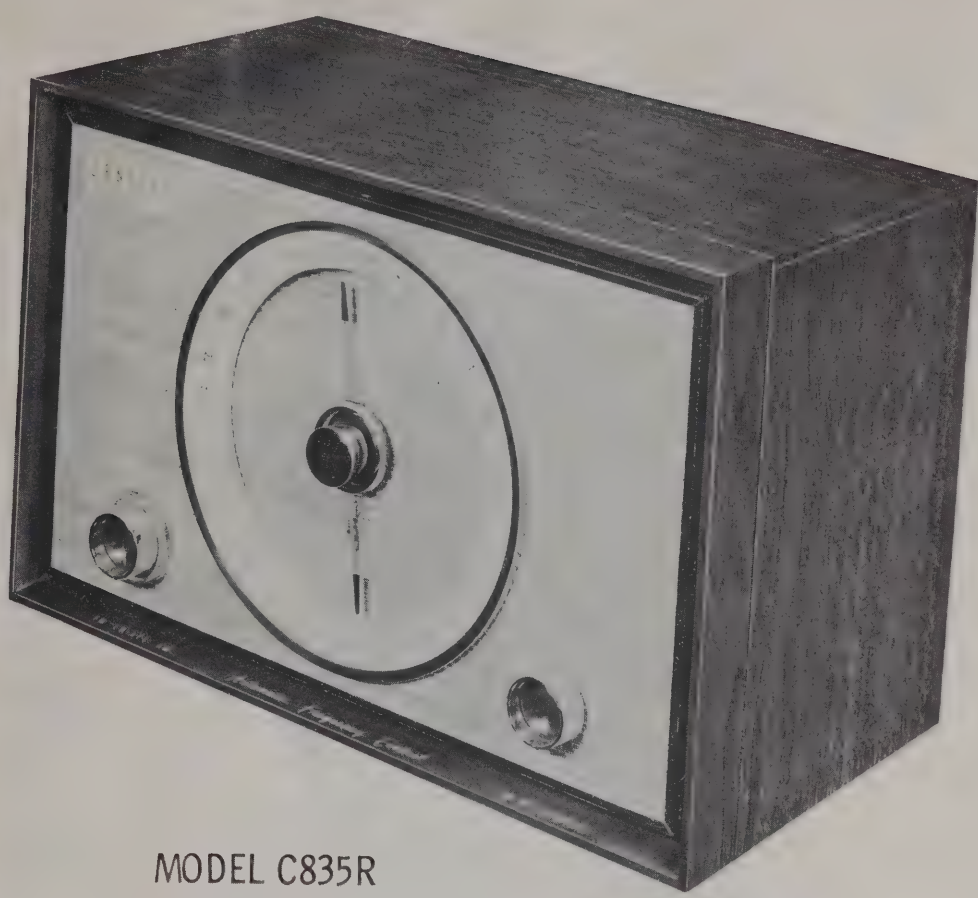
THE COOPERATION OF THE MANUFACTURER OF THIS  
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFAC STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1952

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of +10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



ZENITH MODELS C835E, H, R, W, C845L,  
M, W, Y (Ch. 8C01, 8C02)

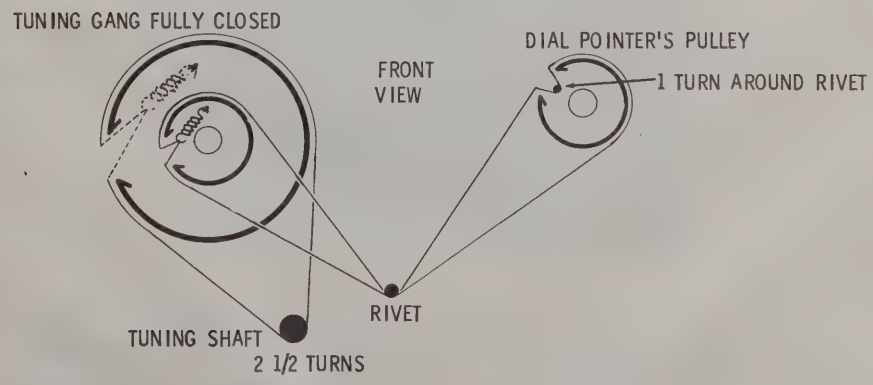


MODEL C835R

ZENITH MODELS C835E, H, R, W, C845L,  
M, W, Y (Ch. 8C01, 8C02)

TRADE NAME	Zenith Models C835E, C835H, C835R, C835W (Ch. 8C01); C845L, C845M, C845W, C845Y (Ch. 8C02)		
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois		
TYPE SET	AC-DC Operated 8 Tube FM-AM Receiver		
POWER SUPPLY	110-120 Volts AC-DC	RATING	29 Watts, .32 Amp. @ 117 Volts, AC
TUNING RANGE	BROADCAST 535-1620KC	FREQ. MOD.	88-108MC

DIAL CORD STRINGING



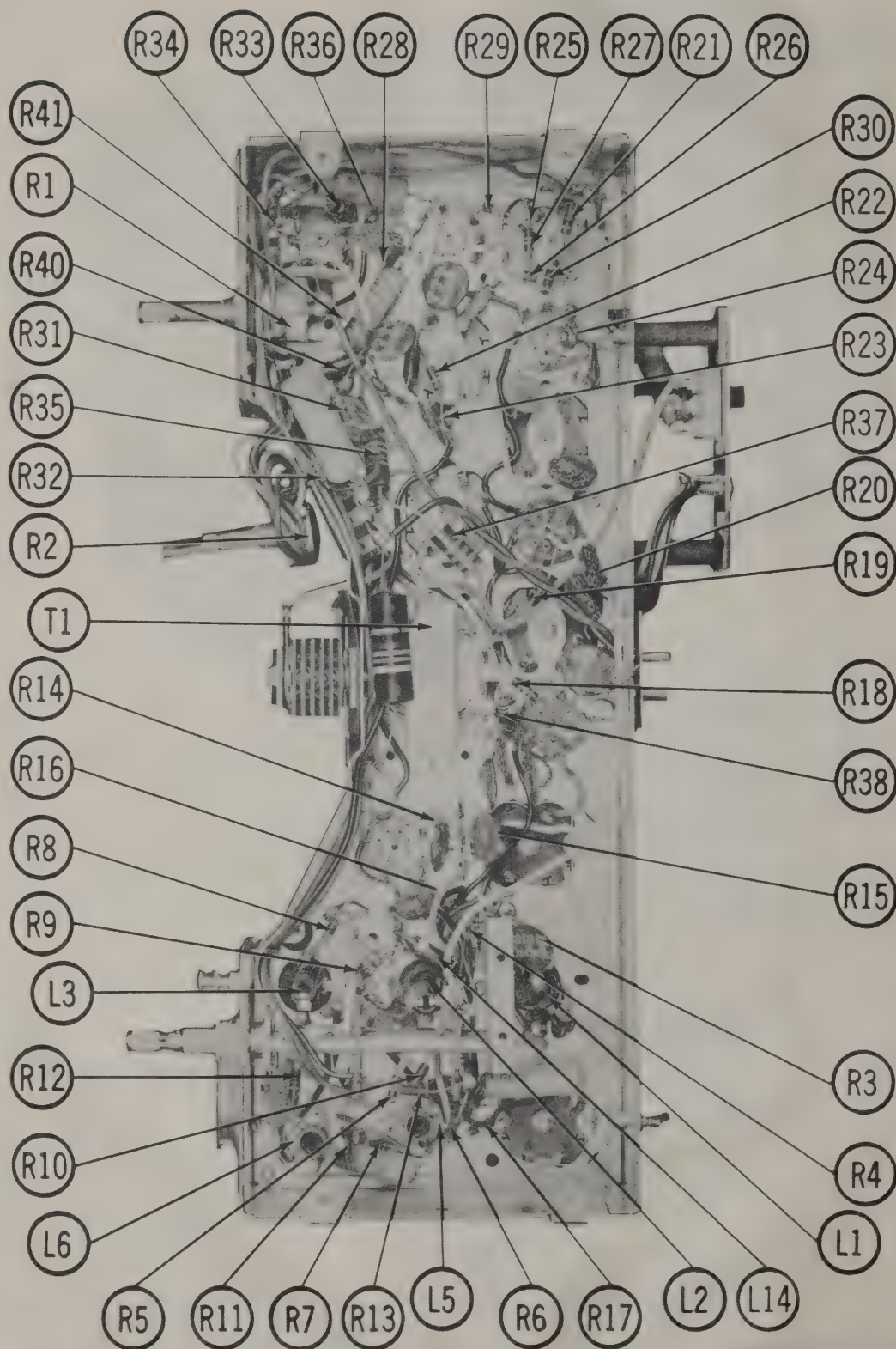
HOWARD W. SAMs & CO., INC. Indianapolis 6, Indiana



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of JK546

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America





CHASSIS BOTTOM VIEW-RESISTOR AND INDU FOR IDENTIFICATION

# ALIGNMENT INSTRUCTIONS

## PRE-ALIGNMENT INSTRUCTIONS

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1 thru A6, A8, A10 thru A17 .... GENERAL CEMENT #8282, 8606, 8606L, 9295  
WALSCO #2526, 2543, 2544, 2545  
A7, A9 ..... GENERAL CEMENT #5004, 5008, 5009  
WALSCO #2520

## AM ALIGNMENT - SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .05mfd to pin 7 (grid) of Mixer. Low side to chassis.	455KC (400v Mod.)	(AM) Tuning gang fully closed	Across voice coil	A1, A2, A3, A4, A5, A6	Adjust for maximum output.
2.	Loop	1600KC	1600KC	"	A7, A8	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	600KC	600KC	"	A9, A10	"
4.	"	1400KC	Tune to 1400KC	"	A11	Adjust for maximum output while rocking tuning gang.

## FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM - SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	High side thru .05mfd to pin 7 (grid) of Mixer. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference	DC probe to pin 1 (grid) of FM Limiter. Common to chassis.	A12, A13, A14, A15, A16, A17	Adjust for maximum deflection.
6.	"	"	"	DC probe to point A. Common to chassis.	A18	"
7.	"	"	"	DC probe to point B. Common to chassis.	A19	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

## FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE - SELECTOR IN FM POSITION

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5.	High side thru .05mfd to pin 7 (grid) of Mixer. Low side to chassis.	10.7MC (450KC swp)	(FM) Point of non-interference	Vert. Amp. to pin 1 (grid) of Limiter. Low side to chassis.	A12, A13, A14, A15, A16, A17	Adjust for maximum gain and symmetry of response similar to Fig. 1 with marker as shown.
6.	"	"	"	Vert. Amp. thru 27K to point A. Low side to chassis.	A18	"
7.	"	"	"	Vert. Amp. to point B. Low side to chassis.	A19	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A16 for maximum amplitude and straightness of crossover lines.

## FM RF ALIGNMENT - SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	Across FM antenna terminals with 270Ω in high side.	98MC (Unmod.)	(FM) 98MC	DC probe to pin 1 (grid) of Limiter. Common to chassis.	A20, A21, A22	Adjust for maximum deflection.

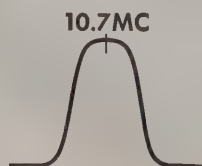


FIG. 1

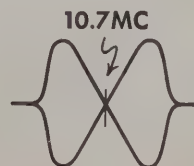
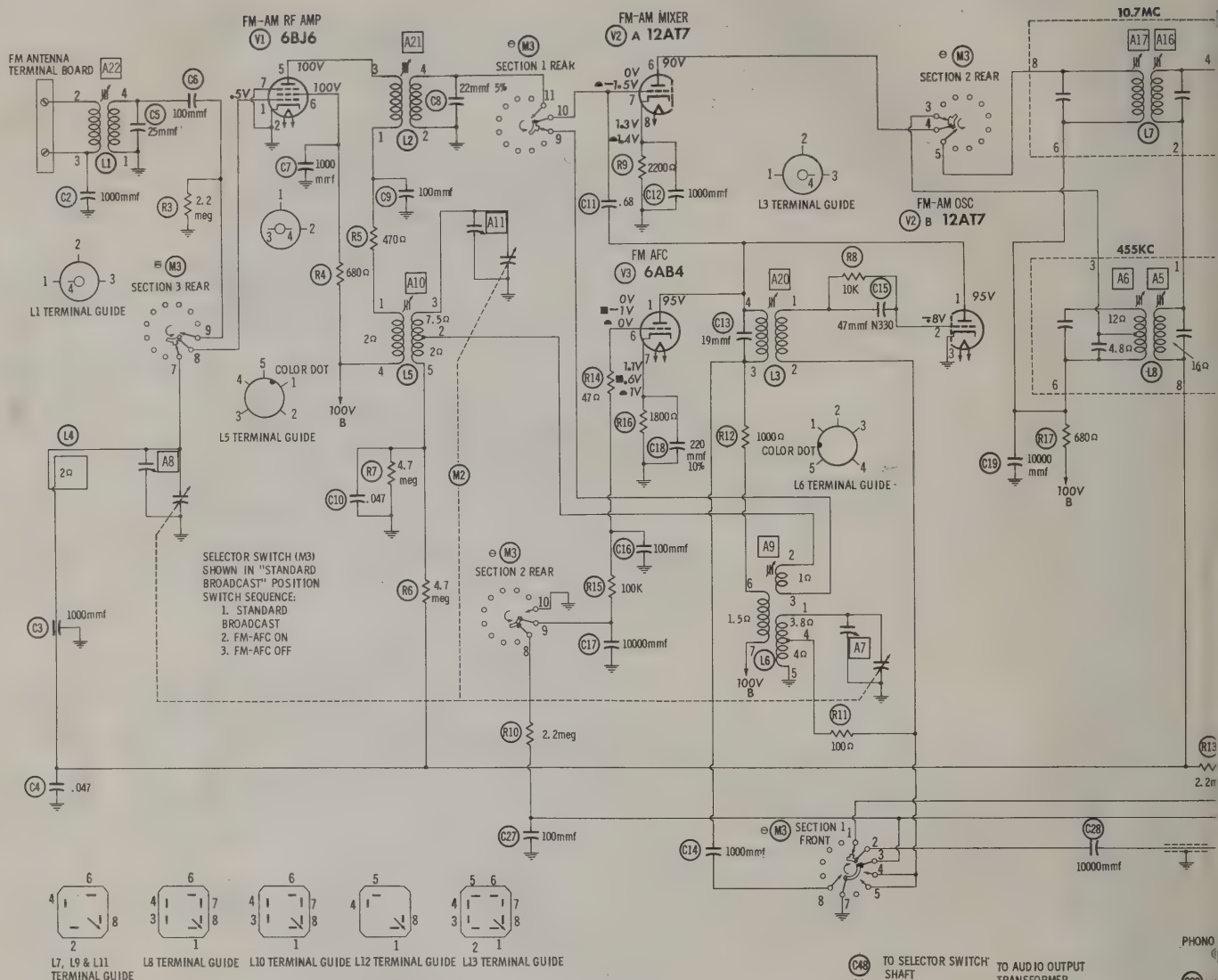


FIG. 2





RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BJ6	2.2meg 2.4meg	0Ω	61Ω	55Ω	+1100Ω	+1700Ω	0Ω		
V2	12AT7	+1600Ω	10K	0Ω	73Ω	61Ω	+1300Ω	0Ω	2200Ω	67Ω
V3	6AB4	+1600Ω	NC	73Ω	79Ω	NC	100K 2.7meg	1800Ω		
V4	12BA6	2meg	0Ω	55Ω	43Ω	+1300Ω	+1300Ω	0Ω		
V5	12BA6	19Ω	0Ω	43Ω	31Ω	+1300Ω	+1300Ω	100Ω		
V6	12AU6	100K	0Ω	31Ω	19Ω	+15K	+15K	0Ω		
V7	19T8	150K	150K	300K	0Ω	19Ω	270K	0Ω	4.7meg	+570K
V8	35C5	120Ω	480K	115Ω	79Ω	480K	+600Ω	+270Ω		

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.

† MEASURED FROM OUTPUT OF M1.

Δ MEASURED IN "AM" POSITION.

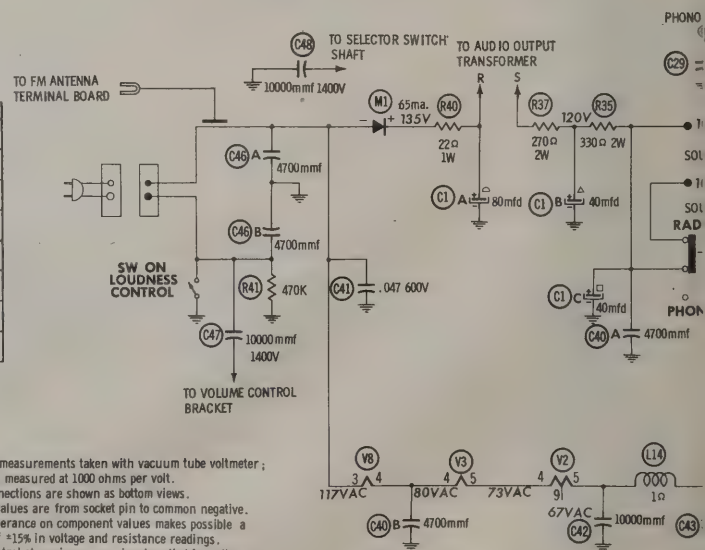
NC NO CONNECTION

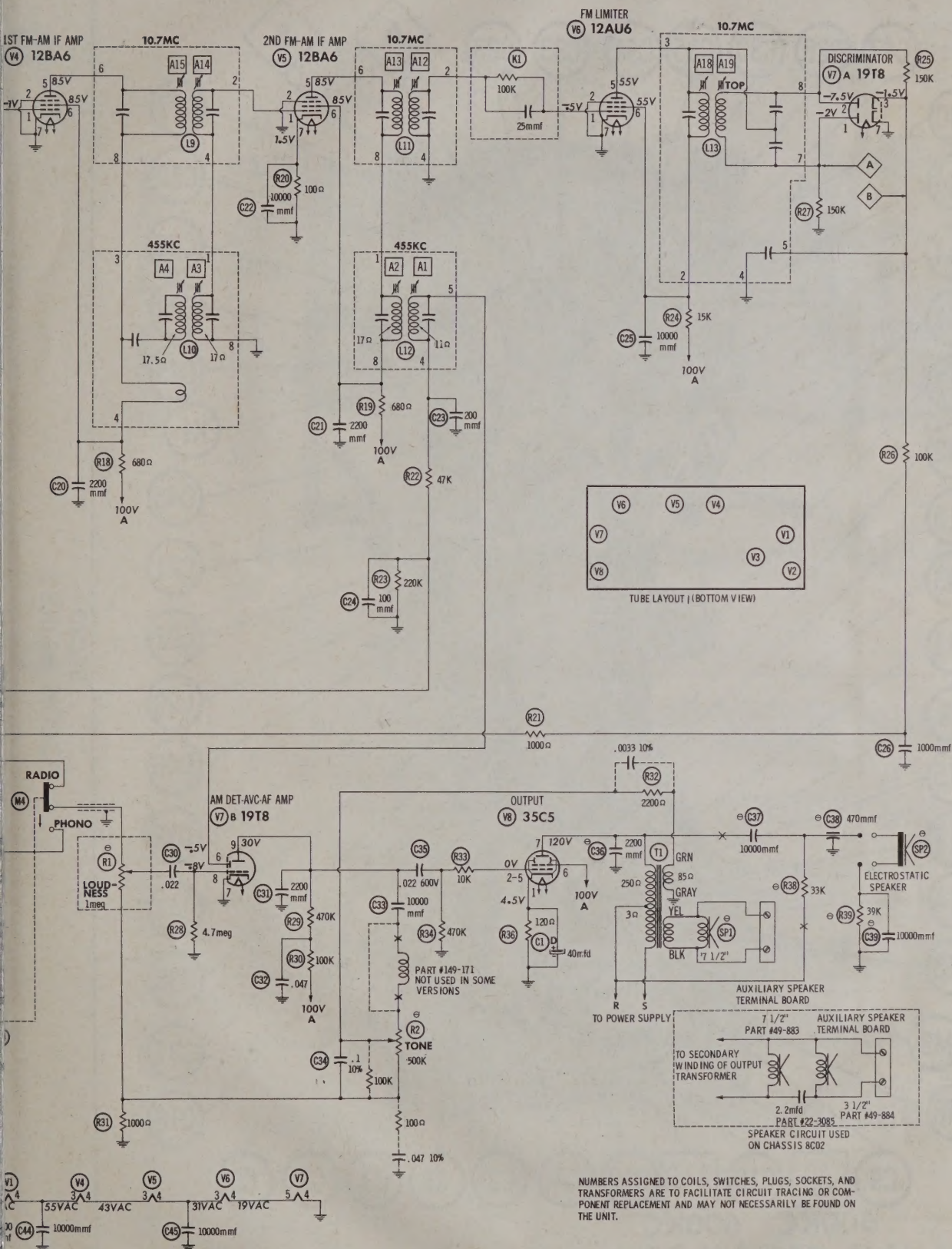
© SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC  
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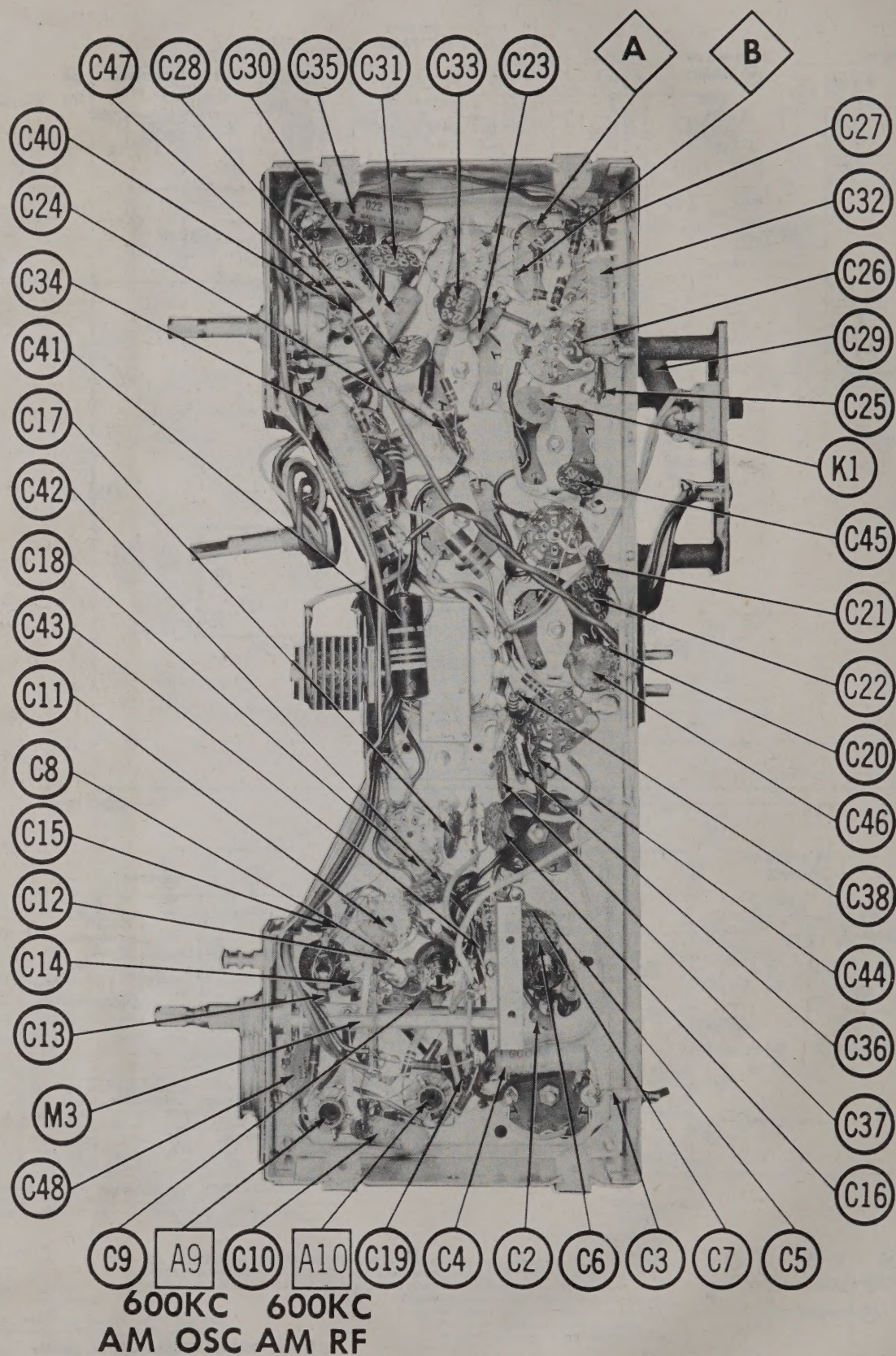
1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of +15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.





ZENITH MODELS C835E, H, R, W, C845L,  
M, W, Y (Ch. 8C01, 8C02)





CHASSIS BOTTOM VIEW—ALIGNMENT, CAPACITOR & MISC. IDENT.



# PARTS LIST AND DESCRIPTIONS TUBES

◆ CBS ◆		◆ GENERAL ELECTRIC ◆		◆ RAYTHEON ◆		◆ SYLVANIA ◆	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE		
V1	FM-AM RF Amplifier	6BJ6	V5	2nd FM-AM IF Amp.	12BA6		
V2	FM-AM Mixer-Osc.	12AT7	V6	FM Limiter	12AU6		
V3	FM AFC	6AB4	V7	Discriminator - AM Det. - AVC - AF Amp.	19T8		
V4	1st FM-AM IF Amp.	12BA6	V8	Output	35C5		

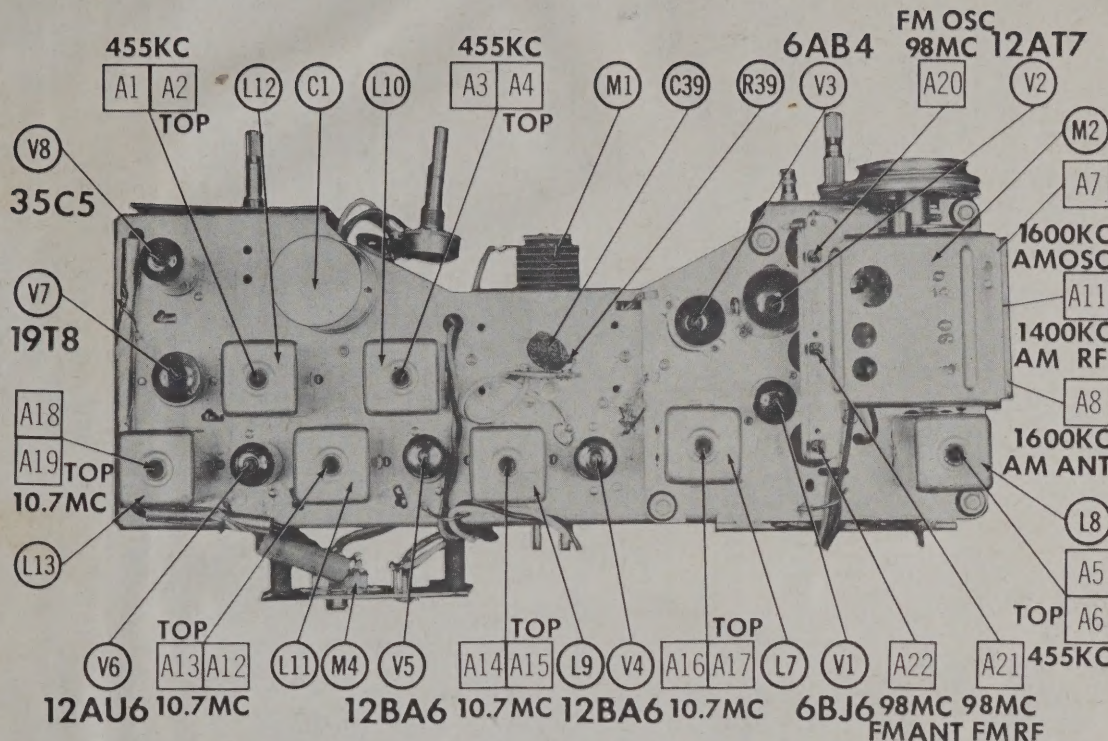
## ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
		ZENITH PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	
C1A	80	22-1661	AFH4-37-10	D0325	FM411. 32	
B	150				TMQ-36	
C	150					
D	25					

## FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CORNELL DUBILIER PART No.	CORNELL DUBILIER PART No.	ELMENDO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	1000		SI 1000	D6-102	BYA10D1	CCD-102	GP210	5HK-D10
C3	1000		EF-001	MFT-1000	CUB2847	CCF-102	GE M-4147	2TM-S47
C4	0.047 200V		P288N-047	DD-503	C10Q25C	4DP-3-473	CNO-425	10TSC-Q25
C5	25		NPO-SI 25	TCZ-25	L10T1	CCTO-270	GP310	10TSC-T10
C6	1000		BPD-0001	DD-101	BYA10D1	CCD-101	GP210	5HK-D10
C7	1000		SI 1000	D6-102	C10Q22C	CCD-102	CNO-422	10TSC-Q22
C8	22	5%	NPO-SI 22	TCZ-22	L10T1	CCD-101	GP310	10TSC-T10
C9	100		BPD-0001	DD-101	CUB2847	4DP-3-473	GE M-4147	2TM-S47
C10	0.047 200V		P288N-047	DD-503	BYA10D1	CCD-102	GP210	5HK-D10
C11	68	#22-1766	NPO-SI .68	TCZ-B68	C10Q2C	CCD-102	CNO-418	5HK-D10
C12	1000		SI 1000	DD-102	BYA10D1	CCD-102	GP210	5HK-D10
C13	19		NPO-SI 20	TCZ-20	CUB2847	CCD-102	GP210	5HK-D10
C14	1000		SI 1000	D6-102	BYA10D1	CCD-102	GP210	5HK-D10
C15	47	N330	TCA-47	DD-101	L10T1	CCD-101	GP310	10TSC-T10
C16	1000		BPD-0001	DD-101	BYA10S1	CCD-103	GP110	5HK-S10
C17	10000		BPD-01	D6-221	L10T1	CCD-221	GP322	10TSC-T22
C18	220	10%	D1-220	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C19	10000		BPD-01	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C20	2200		BPD-0022	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C21	2200		BPD-0022	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C22	2200		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C23	200		SI 200	D6-201	L10T1	CCD-201	GP310	10TSC-T10
C24	100		BPD-0001	DD-101	BYA10S1	CCD-101	GP310	10TSC-T10
C25	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C26	1000		BPD-01	DD-102	BYA10D1	CCD-102	GP210	5HK-D10
C27	100		BPD-01	DD-101	L10T1	CCD-101	GP310	10TSC-T10
C28	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C29	0.047 400V		P488N-047	DD-503	CUB2847	4DP-3-473	GE M-4147	2TM-S47
C30	0.022 400V		P488N-022	DD-203	BYA10D22	CCD-222	GP222	5HK-D22
C31	2200		BPD-0022	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C32	0.047 200V		P288N-047	DD-503	CUB2847	4DP-3-473	GE M-4147	2TM-S47
C33	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C34	1	10%	V84C2P1-10%	DD-203	BYA10D22	CCD-222	GP222	5HK-D22
C35	0.022 600V		P688N-022	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C36	2200	Note 1	BPD-0022	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C37	10000	Note 2	BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C38	470	Note 2	EF-0005	MFT-500	BYA10S1	CCD-501	GP110	5HK-S10
C39	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C40A	4700		BPD-2X0047	DD2-502	BYC6D47	CCD-472	B0X250	5HK-2D47
C41	0.047 600V		P688N-047	DD-503	CUB6547	6DP-3-473	GE M-6147	6TM-S47
C42	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C43	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C44	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C45	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C46A	4700		BPD-2X0047	DD2-502	BYC6D47	CCD-472	B0X250	5HK-2D47
C47	10000 1400V		DAC-27	DD16-103	HV161S1	16DD-472	UAC-110	BL-S10





PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA			
			AEROVOX PART No.	CENTRALAB PART No.	CONRAD DUBUIER PART No.	SPRAGUE PART No.
C48	10000 1400V		DAC-27	DD16-103	EVE1681	BL-S10

\* Zenith Part Number.  
\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.  
Note 1. Chassis 8C02 uses 4500mmf 10% in this application.  
Note 2. Not used in Chassis 8C02.

CONTROLS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA			
			ZENITH PART No.	CENTRALAB PART No.	CTS-IRC PART No.	MALLORY PART No.
RIA	1meg		63-4615	B-70-S	Q13-137	U53
B	Shaft			Not Req.	Not Req.	US-28
C	Switch			KSS-3	76-1	U50
RAA	500K		63-4614	Not Req.	Q11-133	Not Req.
B	Shaft			A47-500K-S	FS-3	Not Req.

Note 1. Chassis 8C02 uses 1 meg volume and switch (Part #63-4479).  
Note 2. Chassis 8C02 uses 500K Tone (Part #63-4480).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS
R3	2.2meg		R29	470K	
R4	680Ω		R30	100K	
R5	470Ω		R31	1000Ω	
R6	4.7meg		R32	2200Ω	
R7	4.7meg		R33	10K	
R8	10K		R34	470K	
R9	2200Ω		R35	330Ω 2W	
R10	2.2meg		R36	120Ω	
R11	100Ω		R37	270Ω 2W	
R12	1000Ω		R38	33K	Note 1
R13	2.2meg		R39	39K	Note 1
R14	47Ω		R40	22Ω 1W	
R15	100K		R41	470K	

Note 1. Not used in Chassis 8C02

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ZENITH PART No.
K1	FM Limiter Cath. Bias	25mmf, 100K	105-42

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		ZENITH PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.
L1	FM Antenna Coil	S-14192			
L2	FM IF Coil	S-15743			
L3	FM Osc. Coil	S-15691			
L4	Loopstick	S-41068			
L5	AM IF Coil	S-41068			
L6	AM Osc. Coil	S-43475			
L7	1st FM IF	95-1201	16-6665	16-6665	FM-251 ▲
L8	2nd FM IF	95-1248	16-3487 *	16-3487 *	FM-251 ▲
L9	3rd FM IF	95-1150	16-3487 *	16-3487 *	FM-251 ▲
L10	4th FM IF	95-1249	16-3487 *	16-3487 *	FM-251 ▲
L11	5th FM IF	95-1150	16-3487 *	16-3487 *	FM-251 ▲
L12	3rd AM IF	95-1254	16-5742	16-5742	BC-340
L13	Discriminator	95-1153	19-1005	19-1005	EC-566
L14	FL Choke	S-15997			4612

▲ Enlarge mounting holes.

\* Use adapter plate.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA					
		PR1	SEC1	ZENITH PART No.	Hollidson PART No.	Merit PART No.	Stancor PART No.
T1	2600Ω 25Q Tap SEC.2 @ 1% 3-4Q			95-1662			

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA			NOTES
		SIZE	FIELD	V. C. IMP.	
SP1	T $\frac{1}{2}$ "	PM		49-608 ①	① Models C835 Series ② Models C845 Series
SP2	Electrostatic	PM		S-23829 ①	
	T $\frac{1}{2}$ "	PM		49-683 ②	

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA			
		CURRENT (Measured)	ZENITH PART No.	INTERNATIONAL PART No.	ITT PART No.
M1	.065A		212-23 ① 212-13 ②	T100 ①	1235AH ①

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M2	Tuning Cap.	22-1677	3 Gang, AM (Ant. 24-40mmf, RF 16-23mmf, Osc. 18-32mmf)
M3	Switch	85-830	FM-AM, Chassis 8C02
M4	Switch	85-862	Radio-Phono (DPDT Slide Type)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART No.	DESCRIPTION
Knob	S-46356	Tuning
Knob	46-2082	Volume, Band Switch, Model C835 Series
Knob	S-44167	Volume, Tone, Models C845 Series
Knob	S-46837	Tone, Model C835 Series
Dial Pointer	S-46838	Models C835 Series
Dial Pointer	59-351	Models C845 Series
Dial Assembly	S-46487	Includes Grille, Dial Scale, & Plate; Models C845 Series
Dial Scale	26-646	Model C835 Series
Cabinet	14-2752W	Model C835W
Cabinet	14-2752E	Model C835E
Cabinet	14-2752H	Model C835H
Cabinet	14-2752R	Model C835R
Cabinet	14-2671W	Model C845W
Cabinet	14-2671L	Model C845L
Cabinet	14-2671M	Model C845M
Cabinet	14-2671Y	Model C845Y

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 9530 (Solid) Available in Ten Colors  
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)  
1725-K (7  $\frac{1}{2}$  Ft. Length)